Pioneer

Operating Instructions

Blu-ray Disc

BONUS *VIEW* ™

HDMI

Blu-ray Disc PLAYER

BDP-LX91

Thank you for buying this Pioneer product.
Please read through these operating instructions so you will know how to operate your model properly.
After you have finished reading the instructions, put them away in a safe place for future reference.

IMPORTANT

The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN

CAUTION:
TO PREVENT THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

D3-4-2-1-1_En-A

CAUTION
This product is a class 1 laser product, but this product contains a laser diode higher than Class 1.
To ensure continued safety, do not remove any covers or attempt to gain access to the inside of the product.
Refer all servicing to qualified personnel.
The following caution label appears on your unit.
Location: inside of the unit

CLASS 1
LASER PRODUCT

CAUTION	CLASS 3B VISIBLE AND INVISIBLE LASER RADIATION WHEN OPEN, AVOID EXPOSURE TO THE BEAM.
ATTENTION	RADIATIONS LASER VISIBLES ET INVISIBLES DE CLASSE 3B QUAND OUVERT. ÉVITEZ TOUT EXPOSITION AU FAISCEAU.
ADVARSEL	KLASSE 3B SYNLIG OG USYNLIG LASERSTRÅLING VED ÅBNING. UNDGÅ UDSÆTTELSE FOR STRÅLING.
VARNING	KLASS 3B SYNLIG OCH OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD. UNDVIK ATT UTSÄTTA DIG FÖR STRÅLEN.
VORSICHT	BEI GEÖFFNETER ABDECKUNG IST SICHTBARE UND UNSICHTBARE LASERSTRAHLUNG DER KLASSE 3B IM GERÄTEINNEREN VORHANDEN. NICHT DEM LASERSTRAHL AUSSETZEN!
PRECAUCIÓN	CUANDO SE ABRE HAY RADIACIÓN LÁSER DE CLASE 3B VISIBLE E INVISIBLE. EVITE LA EXPOSICIÓN A LOS RAYOS LÁSER.
VARO!	AVATTAESSA OLET ALTTIINA NÄKYVÄLLE JA NÄKYMÄTTÖMÄLLE LUOKAN 3B LASERSÄTEILYLLE. ÄLÄ KATSO SÄTEESEEN.
注意	打開時會有CLASS 3B可見和不可見鐳射輻射，請勿受鐳射束輻射。
注意	ここを開くと CLASS 3B の可視レーザ光及び不可視レーザ光が出ます。ビームを直接見たり、触れたりしないこと。

D3-4-2-1-8*_C_En

WARNING
To prevent a fire hazard, do not place any naked flame sources (such as a lighted candle) on the equipment. **D3-4-2-1-7a_A_En**

VENTILATION CAUTION
When installing this unit, make sure to leave space around the unit for ventilation to improve heat radiation (at least 10 cm at top, 10 cm at rear, and 10 cm at each side).

WARNING
Slots and openings in the cabinet are provided for ventilation to ensure reliable operation of the product, and to protect it from overheating. To prevent fire hazard, the openings should never be blocked or covered with items (such as newspapers, table-cloths, curtains) or by operating the equipment on thick carpet or a bed.

D3-4-2-1-7b_A_En

Operating Environment
Operating environment temperature and humidity: +5 ºC to +35 ºC (+41 ºF to +95 ºF); less than 85 %RH (cooling vents not blocked)
Do not install this unit in a poorly ventilated area, or in locations exposed to high humidity or direct sunlight (or strong artificial light) **D3-4-2-1-7c_A_En**

WARNING
This equipment is not waterproof. To prevent a fire or shock hazard, do not place any container filled with liquid near this equipment (such as a vase or flower pot) or expose it to dripping, splashing, rain or moisture. **D3-4-2-1-3_B_En**

WARNING
Before plugging in for the first time, read the following section carefully.

The voltage of the available power supply differs according to country or region. Be sure that the power supply voltage of the area where this unit will be used meets the required voltage (e.g., 230 V or 120 V) written on the rear panel. **D3-4-2-1-4_A_En**

CAUTION
The ⏻ STANDBY/ON switch on this unit will not completely shut off all power from the AC outlet. Since the power cord serves as the main disconnect device for the unit, you will need to unplug it from the AC outlet to shut down all power. Therefore, make sure the unit has been installed so that the power cord can be easily unplugged from the AC outlet in case of an accident. To avoid fire hazard, the power cord should also be unplugged from the AC outlet when left unused for a long period of time (for example, when on vacation). **D3-4-2-2-2a_A_En**

If the AC plug of this unit does not match the AC outlet you want to use, the plug must be removed and appropriate one fitted. Replacement and mounting of an AC plug on the power supply cord of this unit should be performed only by qualified service personnel. If connected to an AC outlet, the cut-off plug can cause severe electrical shock. Make sure it is properly disposed of after removal.
The equipment should be disconnected by removing the mains plug from the wall socket when left unused for a long period of time (for example, when on vacation). **D3-4-2-2-1a_A_En**

POWER-CORD CAUTION

Handle the power cord by the plug. Do not pull out the plug by tugging the cord and never touch the power cord when your hands are wet as this could cause a short circuit or electric shock. Do not place the unit, a piece of furniture, etc., on the power cord, or pinch the cord. Never make a knot in the cord or tie it with other cords. The power cords should be routed such that they are not likely to be stepped on. A damaged power cord can cause a fire or give you an electrical shock. Check the power cord once in a while. When you find it damaged, ask your nearest PIONEER authorized service center or your dealer for a replacement. **S002*_En**

This product complies with the Low Voltage Directive 2006/95/EC and EMC Directive 2004/108/EC.

D3-4-2-1-9a_A_En

This product is for general household purposes. Any failure due to use for other than household purposes (such as long-term use for business purposes in a restaurant or use in a car or ship) and which requires repair will be charged for even during the warranty period. **K041_En**

This product incorporates copyright protection technology that is protected by method claims of certain U.S. patents and other intellectual property rights owned by Macrovision Corporation and other rights owners. Use of this copyright protection technology must be authorized by Macrovision Corporation, and is intended for home and other limited viewing uses only unless otherwise authorized by Macrovision Corporation. Reverse engineering or disassembly is prohibited.

For U.K model:

Replacement and mounting of an AC plug on the power supply cord of this unit should be performed only by qualified service personnel.

IMPORTANT: THE MOULDED PLUG

This appliance is supplied with a moulded three pin mains plug for your safety and convenience. A 10 amp fuse is fitted in this plug. Should the fuse need to be replaced, please ensure that the replacement fuse has a rating of 10 amps and that it is approved by ASTA or BSI to BS1362.

Check for the ASTA mark or the BSI mark on the body of the fuse.

If the plug contains a removable fuse cover, you must ensure that it is refitted when the fuse is replaced. If you lose the fuse cover the plug must not be used until a replacement cover is obtained. A replacement fuse cover can be obtained from your local dealer.

If the fitted moulded plug is unsuitable for your socket outlet, then the fuse shall be removed and the plug cut off and disposed of safely. There is a danger of severe electrical shock if the cut off plug is inserted into any 13 amp socket.

If a new plug is to be fitted, please observe the wiring code as shown below. If in any doubt, please consult a qualified electrician.

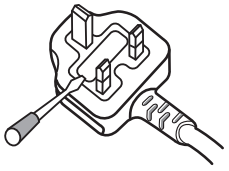
IMPORTANT: The wires in this mains lead are coloured in accordance with the following code:

Blue : Neutral Brown : Live

As the colours of the wires in the mains lead of this appliance may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows ;

The wire which is coloured BLUE must be connected to the terminal which is marked with the letter **N** or coloured BLACK.
The wire which is coloured BROWN must be connected to the terminal which is marked with the letter **L** or coloured RED.

How to replace the fuse: Open the fuse compartment with a screwdriver and replace the fuse.



D3-4-2-1-2-2_B_En

Information for users on collection and disposal of old equipment and used batteries

(Symbol for equipment)

(Symbol examples for batteries)

Pb

These symbols on the products, packaging, and/or accompanying documents mean that used electrical and electronic products and batteries should not be mixed with general household waste.

For proper treatment, recovery and recycling of old products and used batteries, please take them to applicable collection points in accordance with your national legislation.

By disposing of these products and batteries correctly, you will help to save valuable resources and prevent any potential negative effects on human health and the environment which could otherwise arise from inappropriate waste handling.

For more information about collection and recycling of old products and batteries, please contact your local municipality, your waste disposal service or the point of sale where you purchased the items.

These symbols are only valid in the European Union.

For countries outside the European Union:

If you wish to discard these items, please contact your local authorities or dealer and ask for the correct method of disposal.

K058a_A1_En

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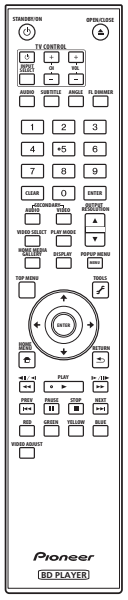
01

Chapter 1

Before you start

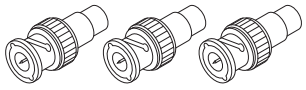
What's in the box

Remote control x 1

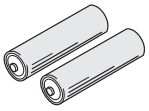


BNC-RCA adapter x 3

Use this to connect an RCA pin type cable to the **COMPONENT VIDEO** terminal.



AA/R6 dry cell batteries x 2



HDMI cable x 1

LAN cable x 1

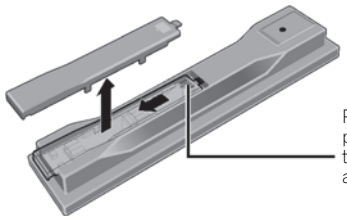
Power cord x 1

Warranty card

Operating instructions (this manual)

Putting the batteries in the remote control

1 Open the rear cover.



Press lightly on this part and slide into the direction of the arrow.

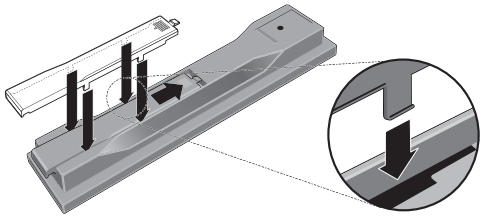
2 Insert the batteries (AA/R6 x 2).

Insert as indicated by the ⊕/⊖ marks into the battery compartment.

Insert the negative (⊖) side first.

3 Close the rear cover.

Close securely (a click should be heard).



Caution

- Do not mix new and old batteries together.
- Batteries may have different voltages, even if they look similar. Do not use different kinds of batteries together.
- To prevent leakage of battery fluid, remove the batteries if you do not plan to use the remote control for a long period of time (1 month or more). If the fluid should leak, wipe it carefully off the inside of the case, then insert new batteries.
- When disposing of used batteries, please comply with governmental regulations or environmental public instruction's rules that apply in your country/area.
- **WARNING**
  Do not use or store batteries in direct sunlight or other excessively hot place, such as inside a car or near a heater. This can cause batteries to leak, overheat, explode or catch fire. It can also reduce the life or performance of batteries.

D3-4-2-3-3_En

Types of discs/files that can be played

Playable discs

Discs with the logo marks below indicated on the disc label, package or jacket can be played.

Disc type		Logo	Application format					
			BDMV[1]	BDAV	DVD-Video	DVD VR	CD-DA DTS-CD	DATA-DISC[2]
BD	BD-ROM		✓	✓	✗	✗	✗	✗
	BD-R		✓	✓	✗	✗	✗	✗
	BD-RE		✓	✓	✗	✗	✗	✗
DVD	DVD-ROM		✓	✗	✓	✗	✗	✓
	DVD-R		✓	✗	✓	✓	✗	✓
	DVD-R DL (Dual Layer)		✓	✗	✓	✓	✗	✓
	DVD-RW		✓	✗	✓	✓	✗	✓
	DVD+R		✓	✗	✓	✗	✗	✓
	DVD+RW		✓	✗	✓	✗	✗	✓
CD	CD-DA (Audio CD)		✗	✗	✗	✗	✓	✗
	CD-R		✗	✗	✗	✗	✓	✓
	CD-RW		✗	✗	✗	✗	✓	✓
	CD-ROM		✗	✗	✗	✗	✓	✓

1. Including the AVCHD format.
2. Discs on which video, image or audio files are recorded

"Blu-ray Disc" and *are trademarks.*

is a trademark of DVD Format/Logo Licensing Corporation.

❖ Discs that cannot be played

- Non-finalized (Non-closed) BD-R discs in the BDMV format
- HD DVDs
- DVD Audio discs
- DVD-RAM discs
- Non-finalized DVD-R/-RW/+R/+RW discs in the DVD-Video format and AVCHD format
- Non-finalized Dual Layer DVD-R discs in the DVD VR format
- Non-finalized CD-R/-RW discs
- SACDs
- Video CDs
- SVCDs

Note

- Some discs cannot be played, even if one of the logo marks on the previous page is indicated.
- To play 8 cm discs, set the disc in the 8 cm disc depression in the center of the disc tray. No adapter is necessary. 8 cm BD-ROMs cannot be played.

❖ About audio formats

The following audio formats are supported on this player:

- Dolby TrueHD
- Dolby Digital Plus
- Dolby Digital
- DTS-HD Master Audio
- DTS-HD High Resolution Audio
- DTS Digital Surround
- MPEG
- MPEG-2 AAC
- Linear PCM

To enjoy the surround sound of Dolby TrueHD, Dolby Digital Plus, DTS-HD Master Audio and DTS-HD High Resolution Audio, it is recommended to connect the player to an AV receiver or amplifier compatible with these audio formats using an HDMI cable. After loading a BD containing sound in one of these audio formats, select the audio format on the menu screen.

See *About the audio output settings* on page 53 for the output conditions of the different formats.

Manufactured under license from Dolby Laboratories. Dolby and the double-D symbol are trademarks of Dolby Laboratories.

Manufactured under license under U.S. Patent #: 5,451,942; 5,956,674; 5,974,380; 5,978,762; 6,487,535 & other U.S. and worldwide patents issued & pending. DTS is a registered trademark and the DTS logos, Symbol, DTS-HD and DTS-HD Advanced Digital Out are trademarks of DTS, Inc. © 1996-2007 DTS, Inc. All Rights Reserved.

❖ Playing BDs

- BDs (BDMV) compatible with the formats below can be played.
  - Blu-ray Disc Read-Only (ROM) Format Version 2
  - Blu-ray Disc Recordable (R) Format Version 2 (finalize (close) them before playing them on this player)
  - Blu-ray Disc Rewritable (RE) Format Version 3

  This player supports BD-ROM Profile 1 Version 1.1. BONUSVIEW Functions such as playback of secondary video (Picture-in-Picture) and secondary audio can be used. For details on secondary video and secondary audio playback, refer to the disc's instructions.

"BONUSVIEW" is trademark of Blu-ray Disc Association.

  When a BD-ROM is played, additional data may be stored in the player's memory area (local storage). If the message indicating low memory (local storage) appears, erase the BDMV data (page 50).
- BDs (BDAV) compatible with the formats below can be played.
  - Blu-ray Disc Recordable (R) Format Version 1
  - Blu-ray Disc Rewritable (RE) Format Version 2
- Dual Layer BDs can be played.
- Video, image and audio files recorded on BDs cannot be played.
- 8 cm BD-ROMs cannot be played.

❖ Playing DVDs

- DVD-Video can be played.
- DVD-R/-RW/+R/+RW discs recorded in the DVD-Video format can be played (finalize them before playing them on this player).
- DVD-R/-RW discs recorded in the VR format (Video Recording format) can be played.

This label indicates playback compatibility with DVD-RW discs recorded in VR format (Video Recording format). However, for discs recorded with a record-only-once encrypted program, playback can only be achieved using a CPRM compatible device.

- DVDs recorded in the AVCHD format can be played (finalize them before playing them on this player).

"AVCHD" and the "AVCHD" logo are trademarks of Panasonic Corporation and Sony Corporation.

- Video, image and audio files recorded on DVD-R/-RW/+R/+RW discs can be played. See *Playable files* below.
- Dual Layer DVDs can be played. However, non-finalized Dual Layer DVD-R discs recorded in the VR format cannot be played (finalize them before playing them on this player).
- HD DVD, DVD Audio and DVD-RAM discs cannot be played.

❖ About region numbers

Blu-ray Disc Player and BD-ROM or DVD-Video discs are assigned region numbers according to the region in which they are sold.

This player's region numbers are:

- BD-ROM: B
- DVD-Video: 2

Discs not including these numbers cannot be played. Discs playable on this player are as shown below.

- BDs: B (including B) and ALL

- DVDs: 2 (including 2) and ALL

❖ Playing CDs

- Audio CDs (CD-DAs and DTS-CDs) can be played.
- Video, image and audio files recorded on CDs can be played. See *Playable files* below.
- CD-R/-RW discs that are not finalized cannot be played.
- SACD, Video CD and Super VCD discs cannot be played.
- Regarding copy protected CDs: This player is designed to conform to the specifications of the Audio CD format. This player does not support the playback or function of discs that do not conform to these specifications.

❖ DualDisc playback

A DualDisc is a new two-sided disc, one side of which contains DVD content — video, audio, etc. — while the other side contains non-DVD content such as digital audio material.

The DVD side of a DualDisc can be played on this player (excluding any DVD-Audio content).

The non-DVD, audio side of the disc is not compatible with this player.

It is possible that when loading or ejecting a DualDisc, the opposite side to that being played will be scratched. Scratched discs may not be playable.

For more detailed information on the DualDisc specification, please refer to the disc manufacturer or disc retailer.

❖ Playing discs created on computers or BD/DVD recorders

- It may not be possible to play discs recorded using a computer due to the application settings or computer's environment settings. Record discs in a format playable on this player. For details, contact the dealer.
- It may not be possible to play discs recorded using a computer or a BD/DVD recorder, if burn quality is not good due to characteristics of the disc, scratches, dirt on the disc, dirt on the recorder's lens, etc.

Playable files

Video, image and audio files recorded on DVDs and CDs can be played.

Caution

- In DVD, only the one recorded by the ISO 9660 file system can be played.
- Some files may not be playable.
- For some files, it may not be possible to use certain functions during playback.
- It may not be possible to play some files, even if they have the extension of a file playable on this player.
- Files protected by DRM (Digital Rights Management) cannot be played (not including DivX VOD files).

❖ Supported video file formats

- **DivX**

  DivX is a media technology created by DivX, Inc. DivX media files contain not only video but also advanced media features like subtitles and alternate audiotracks, etc.

  Conform to the size under 720 x 576 pixels/720 x 480 pixels.

  DivX files encoded with GMC/Qpel option cannot be played.

  Only audio signals with MP3 or Dolby Digital (AC3) format are output.

  Note that files other than the ones containing DivX video cannot be played, even if they have the extension ".avi".

Official DivX® Certified product.

Plays all versions of DivX® video (including DivX® 6) with standard playback of DivX® media files.

DivX, DivX Certified, and associated logos are trademarks of DivX, Inc. and are used under license.

Note

- DivX VOD files are protected by DRM. They can only be played on registered devices.
  - You may be requested by the file distributor to input the DivX VOD registration code for authorization of the player in order to play DivX VOD files. This player's DivX VOD registration code can be checked at **Initial Setup → Playback → DivX VOD → Registration Code** (page 44).
  - DivX VOD files for which the player's DivX VOD registration code is not authorized cannot be played (**Authorization Error** is displayed).
  - The number of views is restricted for some DivX VOD files. When such files are played on this player, the remaining number of views is displayed. Files for which the remaining number of views has reached 0 cannot be played (**Rental Expired** is displayed). Files for which the number of views is not restricted can be played as many times as you like (the remaining number of views is not displayed).

❖ Supported image file formats

- **JPEG**
  File format: JFIF Ver1.02/Exif Ver.2.2
  Resolution: Up to 4096 x 4096 pixels
  Only baseline JPEG files are supported.

❖ Supported audio file formats

- **Windows Media™ Audio 9 (WMA9)**
  Bit rate: Up to 192 kbps
  Sampling frequencies: 22.05 kHz, 32 kHz, 44.1 kHz and 48 kHz

  Windows Media is either a registered trademark or trademark of Microsoft Corporation in the United States and/or other countries.

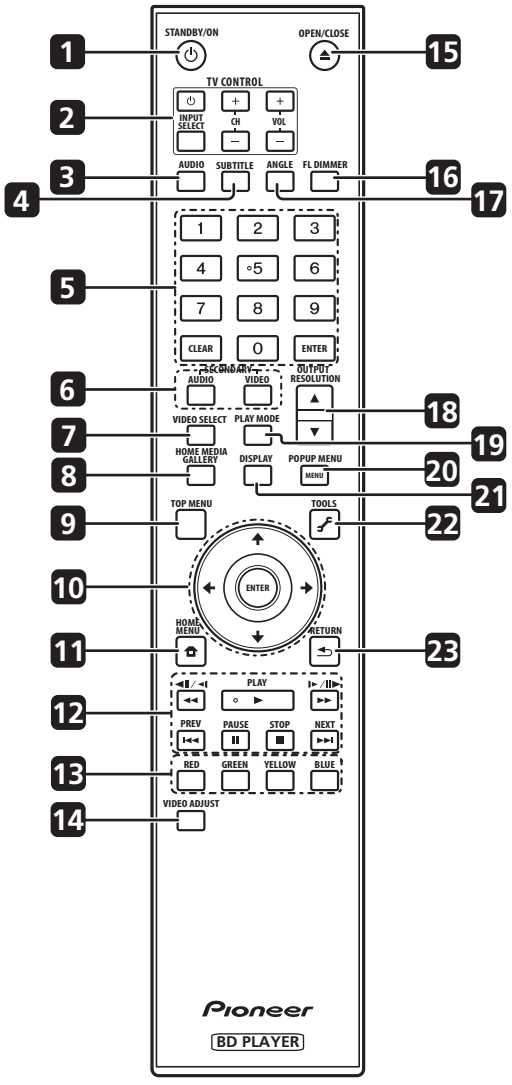
  This product includes technology owned by Microsoft Corporation and cannot be used or distributed without a license from Microsoft Licensing, Inc.
- **MPEG-1 Audio Layer 3 (MP3)**
  Bit rate: Up to 320 kbps
  Sampling frequencies: 8 kHz, 11.025 kHz, 12 kHz, 16 kHz, 22.05 kHz, 24 kHz, 32 kHz, 44.1 kHz and 48 kHz

❖ Playable file extensions

- **Video files**
  .divx and .avi
- **Image files**
  .jpg and .jpeg
- **Audio files**
  .wma and .mp3

Part Names and Functions

Remote Control



1 ⏻ STANDBY/ON
Press to turn the power on and off.

2 TV CONTROL
Your TV can be controlled using the player's remote control (page 22).

⏻ – Press to turn the TV's power on and off.

INPUT SELECT – Press to switch the TV's input.

CH +/– – Press to select the TV channel.

VOL +/– – Press to adjust the volume.

3 AUDIO
Press to switch the audio streams/channels (page 29).

4 SUBTITLE
Press to switch the subtitles (page 28).

5 Number buttons – Use these to select and play the title/chapter/track you want to view or listen to and to select items from menus.
CLEAR – Press to clear the numeric number, etc.
ENTER – Press to execute the selected item or enter a setting that has been changed, etc.

6 SECONDARY AUDIO – When playing a BD-ROM on which secondary audio is recorded, press to switch to the secondary audio (page 29).
SECONDARY VIDEO – When playing a BD-ROM on which secondary video (Picture-in-Picture) is recorded, press to switch to the secondary video (page 29).

7 VIDEO SELECT
Press to switch the video output signal to be viewed between the one output from the **HDMI OUT (MAIN)** terminal, the **HDMI OUT (SUB)** terminal and an analog output terminal (**COMPONENT VIDEO**, **S-VIDEO** or **VIDEO** output terminals) (page 24).

8 HOME MEDIA GALLERY
Press to display/hide the Home Media Gallery screen (page 34).

9 TOP MENU
Press to display the top menu of the BD-ROM or DVD-Video.

10 ↑/↓/←/→ – Use to select items, change settings and move the cursor.
ENTER – Press to execute the selected item or enter a setting that has been changed, etc.

11 HOME MENU
Press to display/hide the Home Menu.

12 ► PLAY – Press to start playback.
II PAUSE – Press to pause playback. Press again to restart playback.

■ STOP – Press to stop playback.

I◄◄ PREV/►►I NEXT – Press to skip to the beginning of the previous/next title/chapter/track/file (page 27).

◄◄/◄II/◄I – Press during playback to start reverse scanning. While playback is paused, press for step reverse playback. Press and hold while playback is paused for reverse slow motion playback (pages 26 and 27).

I►/II►/►► – Press during playback to start forward scanning. While playback is paused, press for step forward playback. Press and hold while playback is paused for forward slow motion playback (pages 26 and 27).

13 RED/GREEN/YELLOW/BLUE
Use these to navigate BD-ROM menus.

14 VIDEO ADJUST
Press to display/hide the Video Adjust menu (page 39).

15 ▲ OPEN/CLOSE
Press to open and close the disc tray.

16 FL DIMMER
Press to switch the brightness of the front panel display. The **FL OFF** indicator lights when **Off** is selected.

17 ANGLE
Press to switch the BD-ROM or DVD-Video camera angles (page 28).

18 OUTPUT RESOLUTION
Use these to switch the output video resolution from the **HDMI OUT** or **COMPONENT VIDEO** output terminals (page 24).

19 PLAY MODE
Press to display/hide the Play Mode screen (page 30).

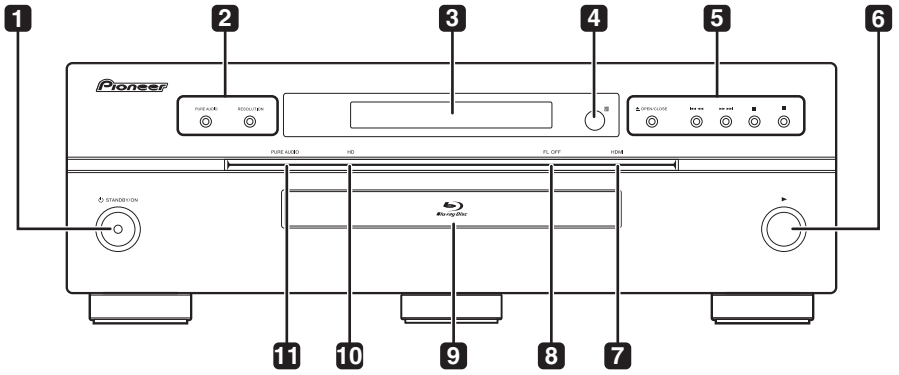
20 POP UP MENU/MENU
Press to display the BD-ROM or DVD-Video menus.

21 DISPLAY
Press to display disc information (page 29).

22 TOOLS
Press to display/hide the **TOOLS** menu (page 23).

23 RETURN
Press to return to the previous screen.

Front Panel



1 ⏻ STANDBY/ON
Press to turn the power on and off.

2 PURE AUDIO – High quality audio signals with any extraneous noise eliminated are output (page 52).
RESOLUTION – Press to switch the output video resolution from **HDMI OUT** or **COMPONENT VIDEO** output terminals (page 24).

3 Front panel display

4 Remote control sensor
Point the remote control to this, then operate it within approximately 7 m.

The player may have trouble capturing remote control signals if there is a fluorescent light nearby. If this happens, move the player away from the fluorescent light.

5 ⏏ OPEN/CLOSE – Press to open and close the disc tray.
I◄◄/◄◄ – Press to skip to the beginning of the previous title/chapter/track/file. Press and hold to start reverse scanning (pages 26 and 27).

►►/►►I – Press to skip to the beginning of the next title/chapter/track/file. Press and hold to start forward scanning (pages 26 and 27).

II – Press during playback to pause. Press again to restart playback.

■ – Press to stop playback.

6 ►
Press to start playback.

7 HDMI indicator
This lights when an HDMI-compatible device is connected to an **HDMI OUT (MAIN)** or **HDMI OUT (SUB)** terminal (page 14).

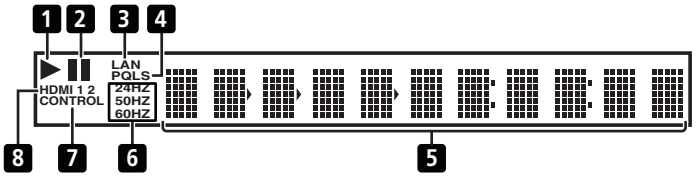
8 FL OFF indicator
This lights when **Off** is selected with **FL DIMMER**.

9 Disc tray

10 HD indicator
This lights when an HDMI cable is connected and video signals are being output with a resolution of 1080/50i, 1080/50p, 720/50p, 1080/24p, 1080/60i, 1080/60p or 720/60p. It also lights when a component video cable is connected and video signals are being output with a resolution of 1080/60i or 720/60p.

11 PURE AUDIO indicator
This lights when **PURE AUDIO** is set to **Mode 1** or **Mode 2** (page 52).

Front Panel Display



1 ►
Lights during playback.

2 II
Lights when playback is paused.

3 LAN
Lights when there is an active local area network (LAN) connection (page 19).

4 PQLS
Lights when the PQLS function is activated (page 15).

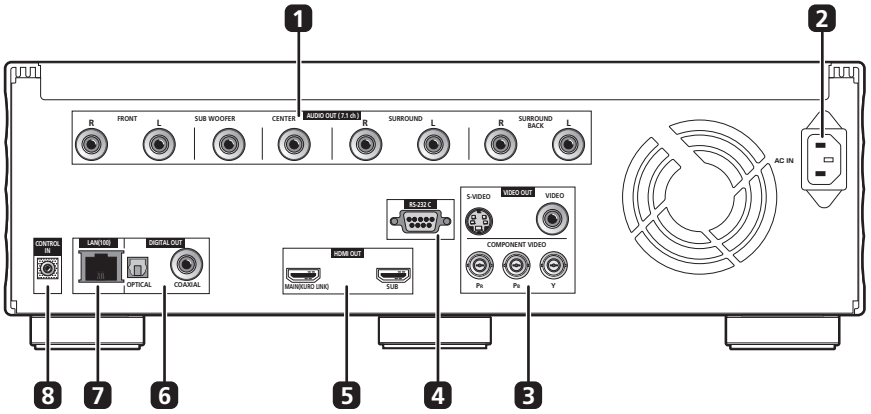
5 Character display
Displays the title/chapter/track number, elapsed time, etc.

6 24HZ/50HZ/60HZ
The frequency of the video frame or field being output lights.

7 CONTROL
Lights when the KURO LINK function is activated (page 15).

8 HDMI 1 2
HDMI 1 lights when **VIDEO SELECT** is pressed and the **HDMI OUT (MAIN)** terminal is selected. **HDMI 2** lights when the **HDMI OUT (SUB)** terminal is selected (page 24).

Rear Panel



1 AUDIO OUT (7.1 ch) terminals
Connect with the multi-channel (7.1- or 5.1-channel) audio input terminals on an AV receiver or amplifier, etc. (page 18).
To connect to the 2-channel audio input terminals on a TV, etc., connect to **FRONT (L/R)**.

2 AC IN
Connect the power cord here.

3 VIDEO OUT terminals
VIDEO – Connect with the video input terminal on a TV, AV receiver or amplifier, etc. (page 17).

S-VIDEO – Connect with the S-Video input terminal on a TV, AV receiver or amplifier, etc. (page 17).

COMPONENT VIDEO (BNC jacks) – Connect with the component video input terminals on a TV, AV receiver or amplifier, etc. (page 17).

4 RS-232C terminal
This terminal is not used.

5 HDMI OUT terminals
MAIN (KURO LINK) – Connect with an HDMI-compatible TV, AV receiver or amplifier, etc. (page 15).

SUB – Connect with an HDMI-compatible TV, projector, etc. (page 15). This terminal outputs linear PCM 2-channel audio signals. Do not connect an AV receiver or amplifier to this terminal. Also note that the KURO LINK function will not work for devices connected to this terminal (page 15).

6 DIGITAL OUT (COAXIAL/OPTICAL) terminals
Connect with the digital audio input terminal on an AV receiver or amplifier, etc. (page 18).

7 LAN (100) terminal
Ethernet port for 100BASE-TX (100 Mbps) network connection (page 19).

8 CONTROL IN terminal
Use to control this player from the remote sensor of another Pioneer component with a **CONTROL OUT** terminal and bearing the mark. Connect the **CONTROL OUT** terminal of the other component to **CONTROL IN** on this player using a mini-plug cord (commercially available).

Caution

- Be sure to connect cables for outputting the audio and video signals.
- When connected via System Control, point the remote control toward the connected component (such as an AV receiver or amplifier). The remote will not work correctly when pointed at this player.
- You cannot use System Control with components that do not have a System Control terminal or with components manufactured by companies other than Pioneer.

Chapter 2

Connecting up

Be sure to turn off the power and unplug the power cord from the power outlet whenever making or changing connections.

After connecting, make the settings at the **Setup Navigator** menu according to the type of cable connected (page 20).

Also refer to the operating instructions of the device being connected.

Connecting using an HDMI cable

The audio and video signals can be transferred to HDMI-compatible devices as digital signals with no loss of sound or video quality.

Note

- Make the settings at the **Setup Navigator** menu according to connected HDMI-compatible device (page 20).
- The **HDMI indicator** on the player's front panel lights when an HDMI-compatible device is connected to an **HDMI OUT (MAIN)** or **HDMI OUT (SUB)** terminal (page 12).
- 1080p video signals may not be output, depending on the HDMI cable being used.

About HDMI

This player incorporates High-Definition Multimedia Interface (HDMI™) technology.

HDMI
HIGH-DEFINITION MULTIMEDIA INTERFACE

HDMI, the HDMI logo and High-Definition Multimedia Interface are trademarks or registered trademarks of HDMI Licensing LLC.

The player supports Deep Color.
The conventional players can transmit a video signal with 8 bit color depth in the YCbCr 4:4:4 or RGB formats, the players supporting Deep Color can transmit a video signal with a color bit depth of greater than 8 bits per color component. Subtle color gradations can be reproduced when connected to a TV that supports Deep Color.

This product is compatible with "x.v.Color" that have the capability to realize a wide-gamut color space based on the xvYCC specifications.
Playing video signals conforming to "xvYCC" standards on this player when connected to an "x.v.Color"-compatible TV, etc., expands color reproduction capabilities, allowing natural colors to be reproduced more faithfully than ever.
"x.v.Color" is a promotion name given to the products that have the capability to realize a wide-gamut color space based on the international standard specifications defined as xvYCC.

x.v.Colour

"x.v.Color" and **x.v.Colour** *are trademarks of Sony Corporation.*

❖ Audio signals that can be transferred with the player's HDMI OUT (MAIN) terminal

- Dolby TrueHD
- Dolby Digital Plus
- Dolby Digital
- DTS-HD Master Audio
- DTS-HD High Resolution Audio
- DTS Digital Surround
- MPEG-2 AAC
- Linear PCM

  Linear PCM audio signals meeting the following conditions can be output:
  - Sampling frequency: 32 kHz to 192 kHz
  - Number of channels: Up to 8 (up to 6 for a 192 kHz sampling frequency)

For details, see *About the audio output settings* on page 53.

❖ About the HDMI High Speed Transmission

This player outputs 1080/50p, 1080/60p and Deep Color video signals. If your TV supports 1080/50p, 1080/60p or Deep Color signals, use a High Speed HDMI™ cable in order to take advantage of the maximum performance the player and TV can offer. Also set **HDMI High Speed Transmission** to **On**. **HDMI High Speed Transmission** can be set separately for the **HDMI OUT (MAIN)** and **HDMI OUT (SUB)** terminals (page 44).

High Speed HDMI™ cables are tested to carry signals up to 1080p. 1080/50i, 1080/50p, 720/50p, 1080/24p, 1080/60i, 1080/60p and 720/60p video signals that are capable of Deep Color can also be carried.

Note

- Set **HDMI High Speed Transmission** to **Off** when using an HDMI cable other than a High Speed HDMI™ cable (a Standard HDMI™ cable).
- The following restrictions apply when **HDMI High Speed Transmission** is set to **Off**:
  - Deep Color signals are not output.
  - If the output video resolution is set to **Auto**, the signals are output with a resolution of 1080/50i or 1080/60i when TV's preferred resolution is 1080/50p or 1080/60p.
  - If the output video resolution is set to 576i/480i or 576p/480p when **HDMI High Speed Transmission** is set to **Off** for the **HDMI OUT (MAIN)** terminal, the Dolby TrueHD and DTS-HD Master Audio audio signals are output as DTS Digital Surround or linear PCM signals. 96 kHz or 192 kHz multi-channel audio signals are output as linear PCM 2-channel audio signals (page 53).
- When an HDMI cable with a built-in equalizer is connected, it may not operate properly.

❖ When connected to a DVI device

- **It is not possible to connect DVI devices (computer displays, for example) that are not compatible with HDCP.** HDCP is a specification to protect audiovisual content across the DVI/HDMI interface.
- No audio signals are output. Connect using an audio cable, etc.
- This player is designed for connection with HDMI-compatible devices. When connected to a DVI device, it may not operate properly depending on the DVI device.

About KURO LINK function

When the player is connected to a Pioneer Flat Screen TV, AV system (AV receiver or amplifier, etc.) or HD AV Converter supporting the KURO LINK function, it can be operated from the Flat Screen TV.

The input switches automatically on the Flat Screen TV, AV system (AV receiver or amplifier, etc.) and HD AV Converter when playback is started on the player or the Home Menu or the Home Media Gallery is displayed. When the input is switched, the playback picture, the Home Menu or the Home Media Gallery appears on the Flat Screen TV (Auto-select function). If the Flat Screen TV's power is being turned off at this time, it may turn on automatically (Simultaneous power function). When the language information from a connected Flat Screen TV is received, you can have the player's on-screen display language change automatically to that of the Flat Screen TV (Unified language function). This function is available only when playback is stopped and the menu screen is not displayed.

Also refer to the operating instructions of the Flat Screen TV, AV system (AV receiver or amplifier, etc.) and HD AV Converter.

Caution

- To use the KURO LINK function, connect the Flat Screen TV, AV system (AV receiver or amplifier, etc.) and HD AV Converter to the **HDMI OUT (MAIN)** terminal. The KURO LINK function will not work if connected to the **HDMI OUT (SUB)** terminal.

❖ To use the KURO LINK function

- The KURO LINK function operates when KURO LINK is set to On for all devices connected to the **HDMI OUT (MAIN)** terminal. Once connections and the settings of all the devices are finished, be sure to check that the player's picture is output to the Flat Screen TV. (Also check after changing the connected devices and reconnecting HDMI cables.) The KURO LINK function may not operate properly if the player's picture is not properly output to the Flat Screen TV.
- Use High Speed HDMI™ cables when using the KURO LINK function. The KURO LINK function may not operate properly if other HDMI cables are used.
- For some models, the KURO LINK function may be referred to as "HDMI Control".

❖ About PQLS function

The PQLS (Precision Quartz Lock System) is a transfer control technology using the KURO LINK function. The player's output signals are controlled from the AV receiver or amplifier to achieve high quality sound playback using the quartz oscillator of AV receiver or amplifier. This eliminates the influence of the jitter generated upon transfer which can adversely affect the sound quality.

- The PQLS function is only activated when a Pioneer AV receiver or amplifier compatible with the PQLS function is connected directly to the player's **HDMI OUT (MAIN)** terminal using an HDMI cable.
- The PQLS function is only activated when playing an audio CD (CD-DA).
- The PQLS function is activated when the player is set as follows (page 44):
  KURO LINK: **On**
  PQLS: **Auto**
- Also refer to the operating instructions of AV receiver or amplifier.

Caution

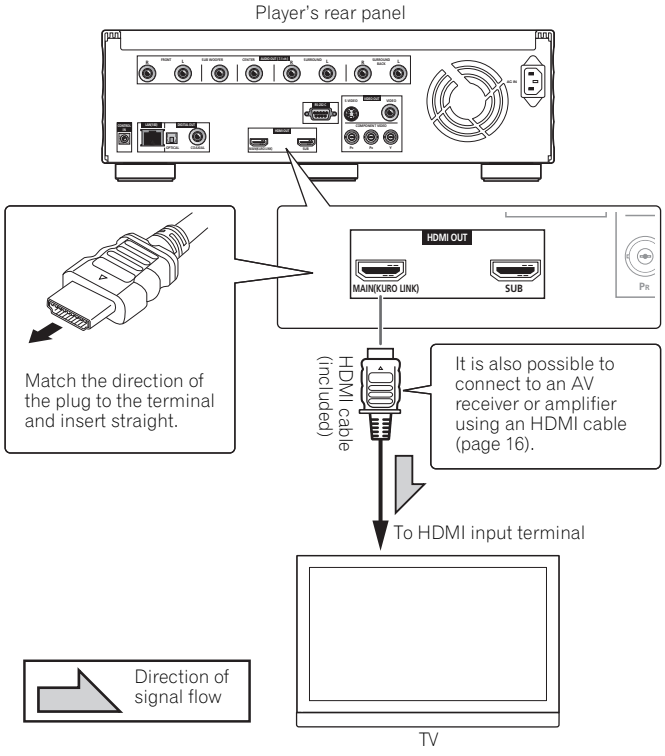
- If the output video resolution is switched when playing an audio CD (CD-DA), the PQLS function does not work. This function will work again after playback stops and restarts.

Connecting a TV

Connect a TV to the **HDMI OUT (MAIN)** terminal. Another TV or a projector can be connected to **HDMI OUT (SUB)**. See *Connecting an AV receiver or amplifier* on page 16 to connect an AV receiver or amplifier using an HDMI cable.

Caution

- Hold the plug when connecting and disconnecting the cable.
- Placing a load on the plug could result in faulty contact and no video signals being output.
- The KURO LINK function will not work if connected to the **HDMI OUT (SUB)** terminal. To use the KURO LINK function, connect the TV to the **HDMI OUT (MAIN)** terminal.

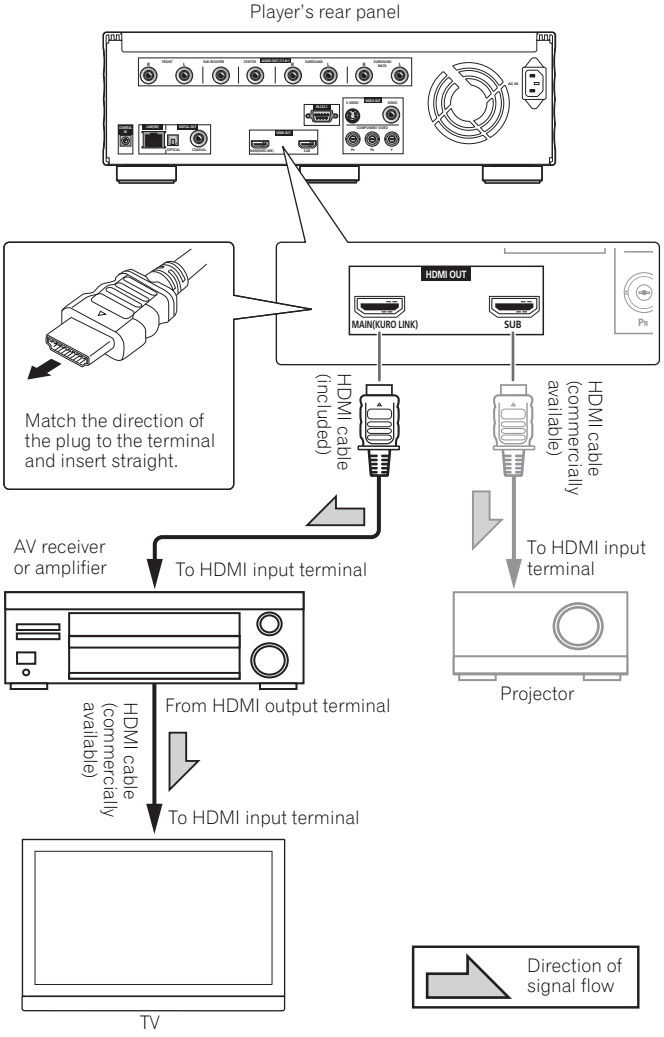

Player's rear panel
HDMI OUT
MAIN(KURO LINK)
SUB
Match the direction of the plug to the terminal and insert straight.
HDMI cable (included)
It is also possible to connect to an AV receiver or amplifier using an HDMI cable (page 16).
To HDMI input terminal
Direction of signal flow
TV

Connecting an AV receiver or amplifier

Connect to an AV receiver or amplifier in order to enjoy the surround sound of Dolby TrueHD, Dolby Digital Plus, Dolby Digital, DTS-HD Master Audio, DTS-HD High Resolution Audio or DTS Digital Surround. For instructions on connecting the TV and speakers to the AV receiver or amplifier, refer to the operating instructions of AV receiver or amplifier.

Caution

- Hold the plug when connecting and disconnecting the cable.
- Placing a load on the plug could result in faulty contact and no video signals being output.
- To use the KURO LINK function, connect the AV receiver or amplifier to the **HDMI OUT (MAIN)** terminal. The KURO LINK function will not work if connected to the **HDMI OUT (SUB)** terminal.
- The **HDMI OUT (SUB)** terminal outputs linear PCM 2-channel audio signals. Be sure to connect the AV receiver or amplifier to the **HDMI OUT (MAIN)** terminal.



Note

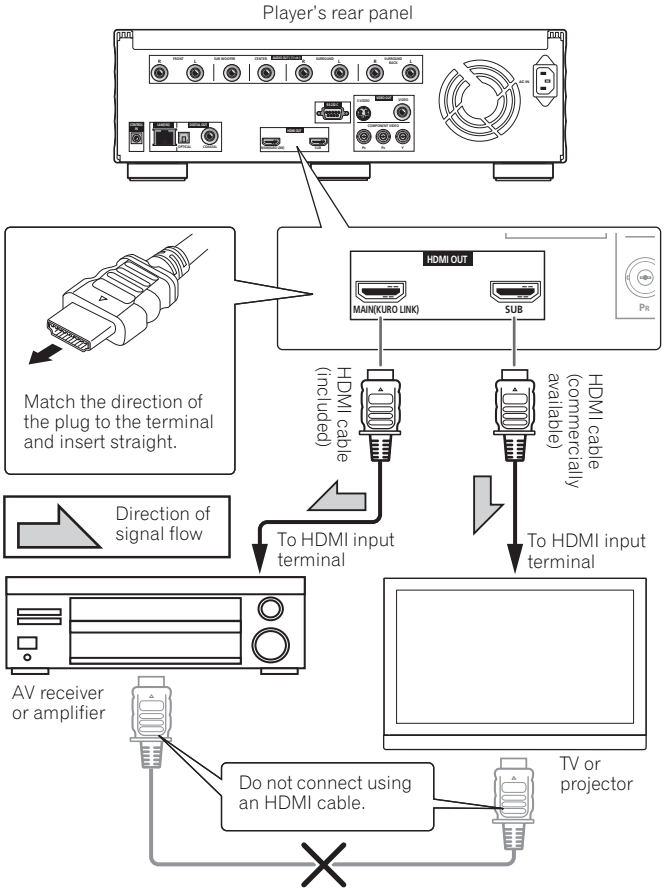
- When DTS-HD Master Audio and DTS-HD High Resolution Audio signals are output as linear PCM signals, the DTS Digital Surround signals are converted to linear PCM for output (page 53).
- See *Stretching widescreen pictures vertically (Anamorphic Zoom)* on page 51 for instructions on viewing 2.35:1 movies with a front projector equipped with an anamorphic lens.

❖ Achieving better sound quality

When connecting one TV (or projector) and AV amplifier to the player, connect in such a way that the video and audio signals are transferred separately in order to achieve higher quality sound.

Note

- Using the Pure Audio function provides high quality sound with extraneous noise eliminated (page 52).

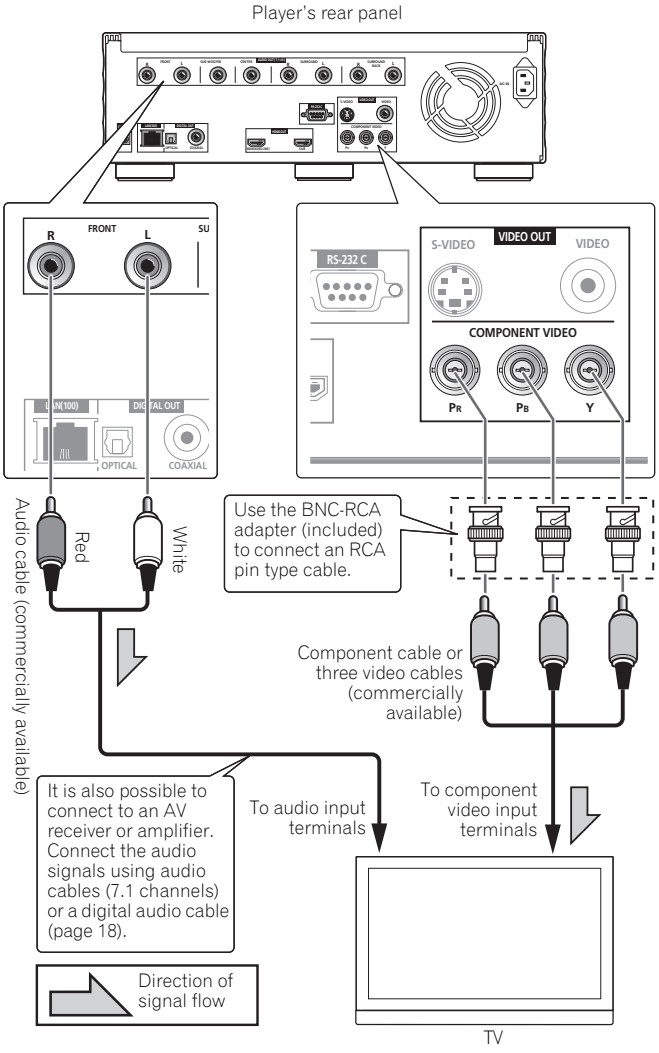

Player's rear panel
HDMI OUT
MAIN(KURO LINK)
SUB
Match the direction of the plug to the terminal and insert straight.
HDMI cable (included)
HDMI cable (commercially available)
Direction of signal flow
To HDMI input terminal
To HDMI input terminal
AV receiver or amplifier
TV or projector
Do not connect using an HDMI cable.

Connecting video and audio cables

Note

- Make the settings in the **Setup Navigator** menu according to the type of cable connected (page 20).
- To output video signals from this player, connect using one of the following (not including when connected using an HDMI cable): a component video cable, an S-Video cable or a video cable.

Connecting a TV using a component video cable and an audio cable



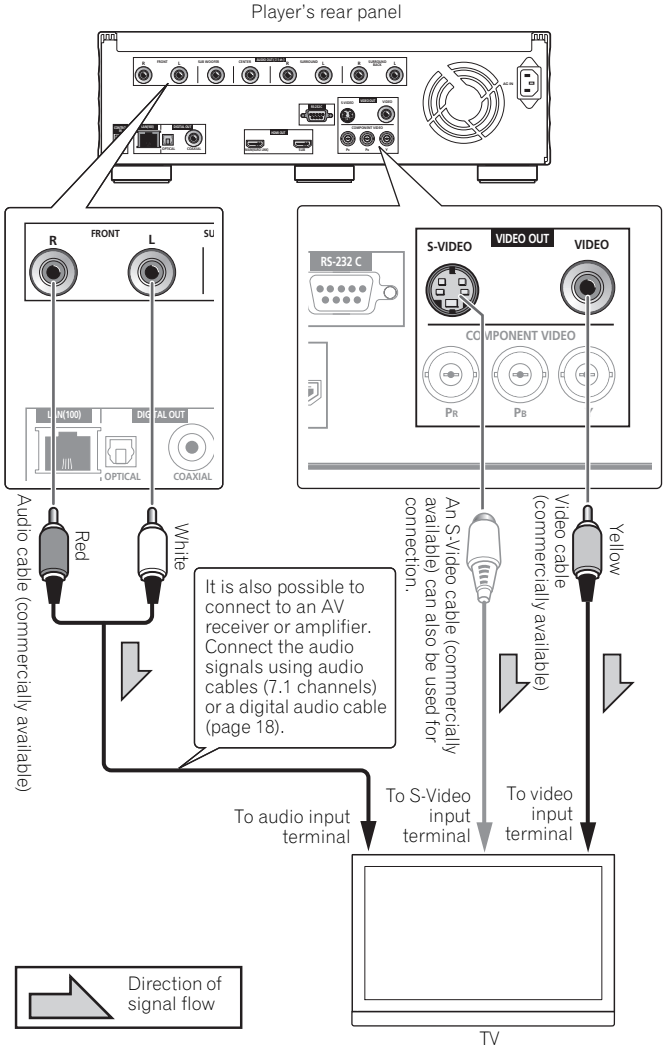
Note

- When connected to the TV using a component video cable, video signals are not output with a resolution of 1080/50i, 1080/50p, 720/50p, 1080/24p or 1080/60p.
- Depending on the output video resolution setting, the picture may not be output (page 24).

Connecting a TV using a video cable and an audio cable

Caution

- **Connect the player's video output directly to your TV.** This player supports analog copy protection technology. Therefore the picture may not be displayed properly if connected to a TV via a DVD recorder/video deck or when playing the player's output material that is recorded by a DVD recorder/ video deck. Furthermore, the picture may not be displayed properly due to the copy protection when the player is connected to a TV with a built-in video deck. For details, contact the manufacturer of your TV.



Note

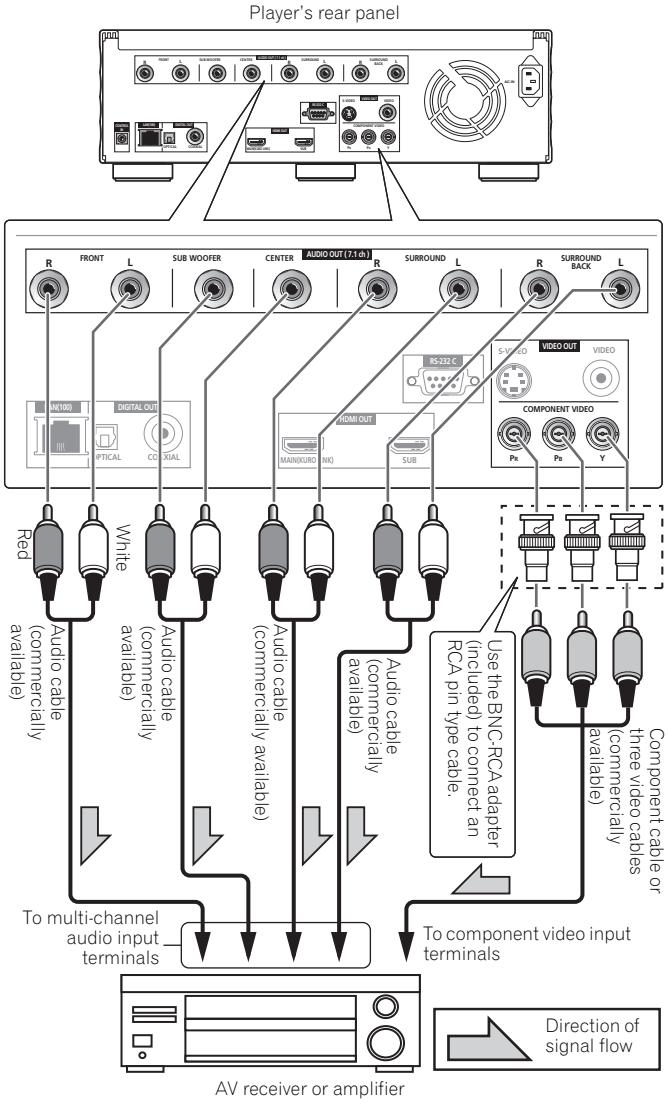
- Video signals are output with a resolution of 576/50i or 480/60i when connected using a video cable or an S-Video cable.

Connecting an AV receiver or amplifier using audio cables

When connecting to a 7.1-channel compatible AV receiver or amplifier – Connect using 4 audio cables (diagram below).

When connecting to a 5.1-channel compatible AV receiver or amplifier – Connect using 3 audio cables (do not connect to the surround back left and right terminals).

- After connecting, set **Audio Output Mode** to **Multi-channel** (page 44).

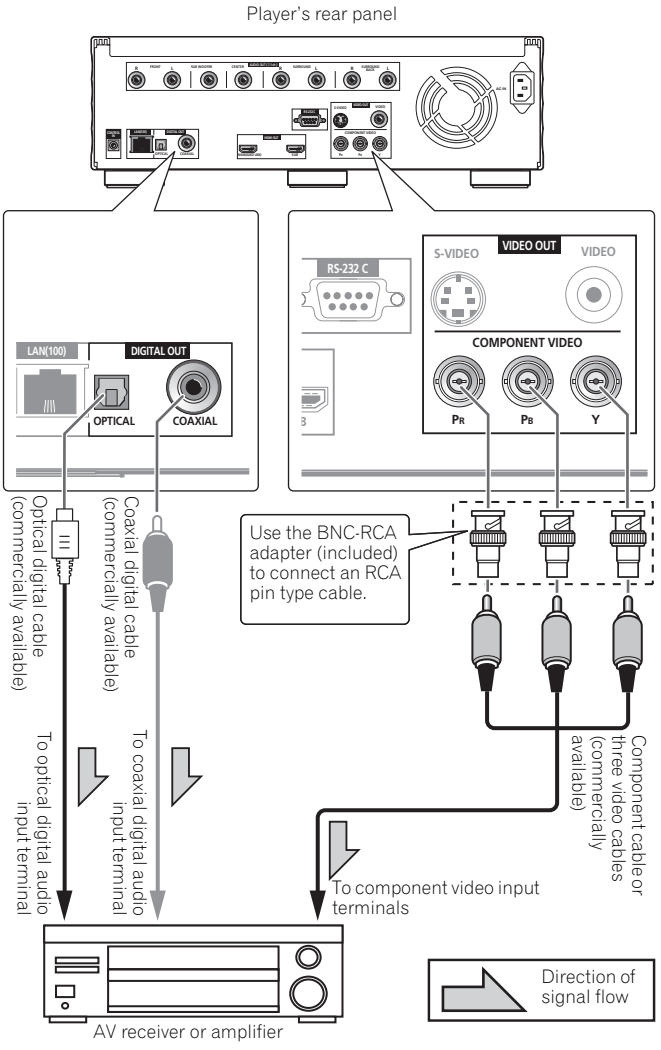


Note

- For DTS-HD Master Audio and DTS-HD High Resolution Audio signals, the DTS Digital Surround signals are converted to linear PCM for output (page 53).

Connecting an AV receiver or amplifier using a digital audio cable

Connect either an optical digital audio cable or a coaxial digital audio cable.



Note

- Dolby TrueHD signals are output as Dolby Digital signals or signals converted from Dolby TrueHD to linear PCM (page 53).
- Dolby Digital Plus signals are output as Dolby Digital signals or signals converted from Dolby Digital to linear PCM (page 53).
- DTS-HD Master Audio and DTS-HD High Resolution Audio signals are output as the DTS Digital Surround signals or signals converted from DTS Digital Surround to linear PCM (page 53).

Network connection

The player's software can be updated over the Internet (page 51). Connect an Ethernet hub (or a router with hub functionality) that is connected to the Internet to the player.

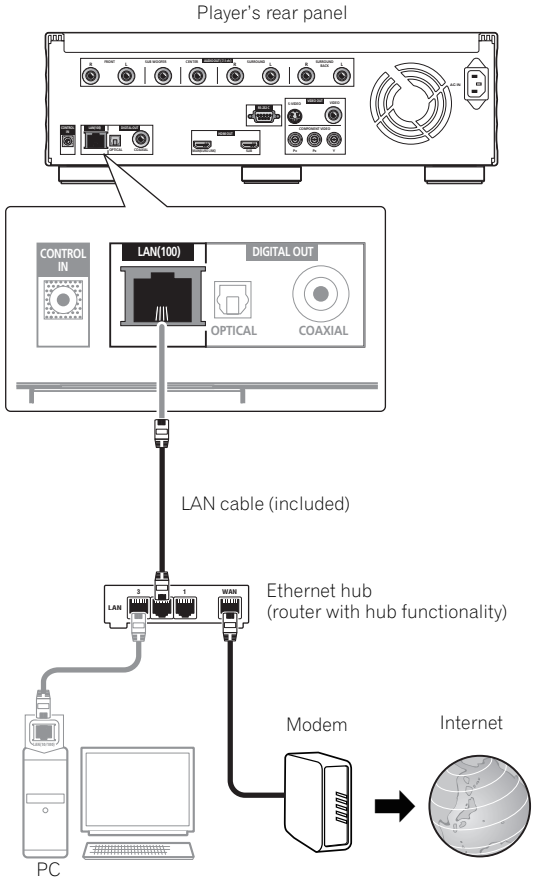
Be sure to use a 100BASE-TX compatible Ethernet hub or router.

Caution

- Use only the included LAN cable to connect this player's **LAN (100)** terminal to a network.

Connecting via an Ethernet hub

If you already operate one or more PCs on a local area network, you can integrate this player by connecting it to the Ethernet hub using a LAN cable.

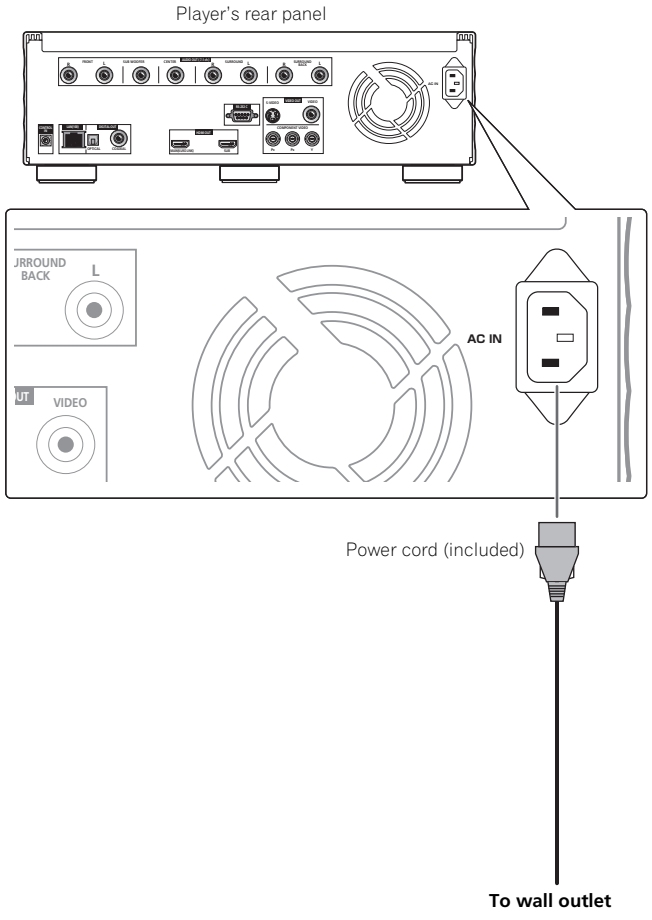


Note

- If there is an available DHCP server in your local area network, the IP address is obtained automatically. Otherwise, set IP address manually (page 49).
- For some Internet service providers, you may have to set the individual network configuration manually. In this case, see page 49.
- Pioneer is not responsible for any malfunction of the player due to communication error/ malfunctions associated with your network connection and/or your connected equipment. Please contact your Internet service provider or network device manufacturer.

Connecting the power cord

Connect the power cord after all the connections between devices have been completed.



Chapter 3
Getting Started

Making settings using the Setup Navigator menu

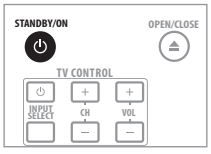
Be sure to perform these settings when using the player for the first time.

Caution

- Before turning on the power, check that the connections between the player and other devices are correct. Also, turn on the power of the devices connected to the player before turning on the player's power.

1 Turn on the TV's power and switch the input.
See the TV's operating instructions for instructions on operating the TV.
If TV Control is set, the TV can be operated with the player's remote control (page 22).

2 Turn on the player's power.
Press ⏻ **STANDBY/ON**.

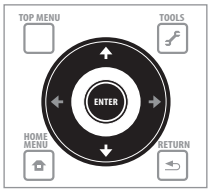


Check that the **Setup Navigator** menu is displayed.

❖ If the Setup Navigator menu is not displayed

▶ **Press HOME MENU to display the Home Menu, select Initial Setup → Setup Navigator → Start, then press ENTER.**

3 Select the OSD language.
Use ⬆/⬇ to select, then press **ENTER**.



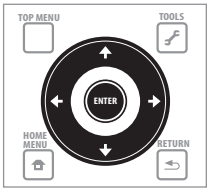
Setup Navigator
BD PLAYER
Please select the on-screen display language.

■English
français
Deutsch
Italiano
Español
Русский

Audio, subtitle and BDMV/DVD-Video menu language will also be set.

When a Pioneer Flat Screen TV that is compatible with KURO LINK is connected to this player's **HDMI OUT (MAIN)** terminal, language settings are imported from the Pioneer Flat Screen TV's language settings before **Setup Navigator** begins.

4 Select and set the video and audio output terminals.
Select the actually connected video and audio output terminals.
Use ⬆/⬇/⬅/➡ to select, then press **ENTER**.



Setup Navigator
BD PLAYER
Select the output terminals to be used for the video and audio signals of this player.

Video ⬅	HDMI MAIN ➡
Audio	HDMI MAIN

Use [⬆][⬇] to select video or audio, then press [⬅][➡] to select the output terminal.

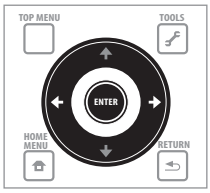
Setting item		Output terminal name	
Video	HDMI MAIN	HDMI OUT (MAIN)	
	HDMI SUB	HDMI OUT (SUB)	
	COMPONENT/S/VIDEO	VIDEO OUT	COMPONENT VIDEO
			S-VIDEO
			VIDEO
Audio	HDMI MAIN	HDMI OUT (MAIN)	
	DIGITAL AUDIO	DIGITAL OUT	COAXIAL
			OPTICAL
	ANALOG AUDIO	AUDIO OUT (7.1 ch)	

Caution

- The video and audio signals output from the set output terminals are output synchronously (lip synchronization).
- When **HDMI MAIN** or **DIGITAL AUDIO** is selected at **Audio**, linear PCM audio signals (2 channels) are output from all terminals other than the ones selected at **Audio**.
- When **ANALOG AUDIO** is selected at **Audio**, no audio signals are output from the **HDMI OUT** or **DIGITAL OUT** terminals.
- The **HDMI OUT (SUB)** terminal outputs linear PCM 2-channel audio signals. **HDMI SUB** cannot be selected for **Audio**. To listen to the device connected to the **HDMI OUT (SUB)** terminal, select **HDMI MAIN**.

For steps 5 to 8, the step to which you should proceed depends on the combination of the Video and Audio settings.

5 Select and set the HDMI High Speed Transmission setting for the HDMI OUT (MAIN) terminal.
Use ⬅/➡ to select, then press **ENTER**.



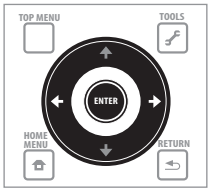
Setup Navigator
BD PLAYER
Select the HDMI High Speed Transmission setting for HDMI MAIN.

On Off

Normally select [On] (Recommended).
Select [Off] if the video or audio of HDMI-connected was not output in the test output.

When **HDMI High Speed Transmission** for the **HDMI OUT (MAIN)** terminal is set to **On**, use a High Speed HDMI™ cable. The picture and sound may not be output properly if any other HDMI cable (for example a standard HDMI™ cable) or an HDMI cable with built-in equalizer is used.

6 Select and set the HDMI High Speed Transmission setting for the HDMI OUT (SUB) terminal.
Use ⬅/➡ to select, then press **ENTER**.



Setup Navigator
BD PLAYER
Select the HDMI High Speed Transmission setting for HDMI SUB.

On Off

Normally select [On] (Recommended).
Select [Off] if the video or audio of HDMI-connected was not output in the test output.

When **HDMI High Speed Transmission** for the **HDMI OUT (SUB)** terminal is set to **On**, use a High Speed HDMI™ cable. The picture and sound may not be output properly if any other HDMI cable (for example a standard HDMI™ cable) or an HDMI cable with built-in equalizer is used.

7 Select the output video resolution from the COMPONENT VIDEO output terminals.
Use ⬆/⬇ to select, then press **ENTER**.

Setup Navigator
BD PLAYER
Select the output video resolution at the Component video terminal.

■ **576i/480i**
576p/480p
720p
1080i
Source Direct
Don't Know

If you select [Source Direct], the output resolution is determined according to the video format of the playing source.

For details on the resolution settings, see *Switching the output video resolution* on page 24.

8 Select the aspect ratio of your TV.
Use ⬆/⬇ to select, then press **ENTER**.

Setup Navigator
BD PLAYER
Select the screen aspect ratio to match your TV.

■ **16:9 (Widescreen)**
4:3 (Standard)

9 Check the settings.
Select **Proceed**, then press **ENTER**.

Setup Navigator
BD PLAYER
Select [Proceed] if you want to start testing your audio and video settings.

Proceed

10 Output test tones.
Use ⬅/➡ to select **Yes**, then press **ENTER**.

Setup Navigator
BD PLAYER
The test tone will be output.
Reduce the volume to an appropriate level.

Yes **No**

The video and/or audio may not be output under certain setup.
The setup menu comes back in 30 seconds.

Caution

- The screen in step 11 and test tones are output simultaneously according to the settings in steps 4 to 8. Lower the volume of the devices connected with the player.

11 Finish the Setup Navigator menu.
Use ←/→ to select **Finish**, then press **ENTER**.

To redo the settings from the start, select **Go Back**.

Depending on the output terminal setting of step 4 or the HDMI cable being used, it may happen that no picture and/or sound is output. If this happens, the setup returns to step 4 if there is no operation for over 30 seconds. Once the setup returns to step 4, redo the settings according to the connected devices and the HDMI cable being used.

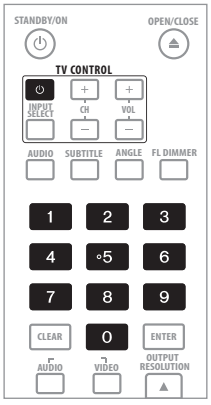
Operating the TV with the player's remote control

When the manufacturer code for your brand of TV is set on the player's remote control, the TV can be operated using the player's remote control.

Caution

- For some models it may not be possible to operate the TV with the player's remote control, even for TVs of brands listed on the manufacturer code list.
- The setting may be restored to the default after the batteries are replaced. If this happens, reset it.

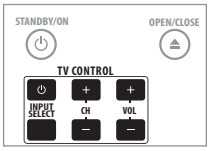
1 Input the 2-digit manufacturer code.
Press the number buttons (0 to 9) to input the code while pressing **TV CONTROL** ⏻.



Note

- The factory setting is **PIONEER 00**.
- If you make a mistake when inputting the code, release **TV CONTROL** ⏻ then start over from the beginning.
- When there are multiple codes for a manufacturer, try inputting them in the indicated order until the TV can be operated.

2 Check that the TV can be operated.



TV Preset code list

Manufacturer Code(s)

PIONEER 00, 31, 32, 07, 36, 42, 51
ACURA 44
ADMIRAL 31
AIWA 60
AKAI 32, 35, 42
AKURA 41
ALBA 07, 39, 41, 44
AMSTRAD 42, 44, 47
ANITECH 44
ASA 45
ASUKA 41
AUDIOGONIC 07, 36
BASIC LINE 41, 44
BAUR 31, 07, 42
BEKO 38
BEON 07
BLAUPUNKT 31
BLUE SKY 41
BLUE STAR 18
BPL 18
BRANDT 36
BTC 41
BUSH 07, 41, 42, 44, 47, 56
CASCADE 44
CATHAY 07
CENTURION 07
CGB 42
CIMLINE 44
CLARIVOX 07
CLATRONIC 38
CONDOR 38
CONTEC 44
CROSLEY 32
CROWN 38, 44
CRYSTAL 42
CYBERTRON 41
DAEWOO 07, 44, 56
DAINICHI 41
DANSAI 07
DAYTON 44
DECCA 07, 48
DIXI 07, 44
DUMONT 53
ELIN 07
ELITE 41
ELTA 44
EMERSON 42
ERRES 07
FERGUSON 07, 36, 51
FINLANDIA 35, 43, 54
FINLUX 32, 07, 45, 48, 53, 54
FIRSTLINE 40, 44
FISHER 32, 35, 38, 45
FORMENTI 32, 07, 42
FRONTECH 31, 42, 46
FRONTECH/PROTECH 32
FUJITSU 48
FUNAI 40, 46, 58
GBC 32, 42
GE 00, 01, 08, 07, 10, 11, 17, 02, 28, 18
GEC 07, 34, 48
GELOSO 32, 44
GENERAL 29
GENEXXA 31, 41
GOLDSTAR 10, 23, 21, 02, 07, 50
GOODMANS 07, 39, 47, 48, 56
GORENJE 38
GPM 41
GRAETZ 31, 42
GRANADA 07, 35, 42, 43, 48
GRADIENTE 30, 57
GRANDIN 18
GRUNDIG 31, 53
HANSEATIC 07, 42
HCM 18, 44
HINARI 07, 41, 44
HISAWA 18
HITACHI 31, 33, 34, 36, 42, 43, 54, 06, 10, 24, 25, 18
HUANYU 56
HYPSON 07, 18, 46
ICE 46, 47
IMPERIAL 38, 42
INDIANA 07
INGELEN 31
INTERFUNK 31, 32, 07, 42
INTERVISION 46, 49
ISUKAI 41
ITC 42
ITT 31, 32, 42
JEC 05
JVC 13, 23
KAISUI 18, 41, 44
KAPSCH 31
KENDO 42
KENNEDY 32, 42
KORPEL 07
KOYODA 44
LEYCO 07, 40, 46, 48
LIESENK&TTER 07
LOEWE 07
LUXOR 32, 42, 43
M-ELECTRONIC 31, 44, 45, 54, 56, 07, 36, 51
MAGNADYNE 32, 49
MAGNAFON 49
MAGNAVOX 07, 10, 03, 12, 29
MANESTH 39, 46
MARANTZ 07
MARK 07
MATSUI 07, 39, 40, 42, 44, 47, 48
MCMICHAEL 34
MEDIATOR 07
MEMOREX 44
METZ 31
MINERVA 31, 53
MITSUBISHI 09, 10, 02, 21, 31
MULTITECH 44, 49
NEC 59
NECKERMANN 31, 07
NEI 07, 42
NIKKAI 05, 07, 41, 46, 48
NOBLIKO 49
NOKIA 32, 42, 52
NORDMENDE 32, 36, 51, 52

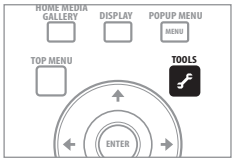
OCEANIC 31, 32, 42
ORION 32, 07, 39, 40
OSAKI 41, 46, 48
OSO 41
OSUME 48
OTTO VERSAND 31, 32, 07, 42
PALLADIUM 38
PANAMA 46
PANASONIC 31, 07, 08, 42, 22
PATHO CINEMA 42
PAUSA 44
PHILCO 32, 42
PHILIPS 31, 07, 34, 56, 68
PHOENIX 32
PHONOLA 07
PROFEX 42, 44
PROTECH 07, 42, 44, 46, 49
QUELLE 31, 32, 07, 42, 45, 53
R-LINE 07
RADIOLA 07
RADIOSHACK 10, 23, 21, 02
RBM 53
RCA 01, 10, 15, 16, 17, 18, 61, 62, 09
REDIFFUSION 32, 42
REX 31, 46
ROADSTAR 41, 44, 46
SABA 31, 36, 42, 51
SAISHO 39, 44, 46
SALORA 31, 32, 42, 43
SAMBERS 49
SAMSUNG 07, 38, 44, 46, 69, 70
SANYO 35, 45, 48, 21, 14, 91
SBR 07, 34
SCHAUB LORENZ 42
SCHNEIDER 07, 41, 47
SEG 42, 46
SEI 32, 40, 49
SELECO 31, 42
SHARP 02, 19, 27, 67, 90
SIAREM 32, 49
SIEMENS 31
SINUDYNE 32, 39, 40, 49
SKANTIC 43
SOLAVOX 31
SONOKO 07, 44
SONOLOR 31, 35
SONTEC 07
SONY 04
SOUNDWAVE 07
STANDARD 41, 44
STERN 31
SUSUMU 41
SYSLINE 07
TANDY 31, 41, 48
TASHIKO 34
TATUNG 07, 48
TEC 42
TELEAVIA 36
TELEFUNKEN 36, 37, 52
TELETECH 44
TENSAI 40, 41
THOMSON 36, 51, 52, 63
THORN 31, 07, 42, 45, 48
TOMASHI 18
TOSHIBA 05, 02, 26, 21, 53
TOWADA 42
ULTRAVOX 32, 42, 49
UNIDEN 92
UNIVERSUM 31, 07, 38, 42, 45, 46, 54
VESTEL 07
VICTOR 13
VOXSON 31
WALTHAM 43
WATSON 07
WATT RADIO 32, 42, 49
WHITE WESTINGHOUSE 07
YOKO 07, 42, 46
ZENITH 03, 20

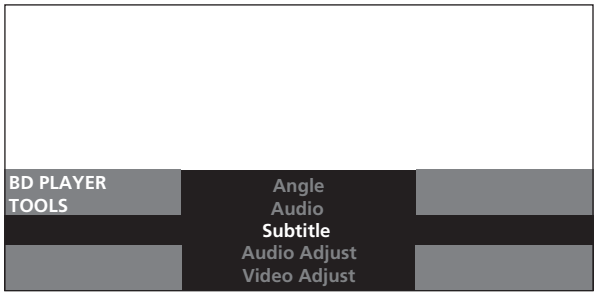
Using the TOOLS menu

Various functions can be called out according to the player's operating status.

1 Display the TOOLS menu.

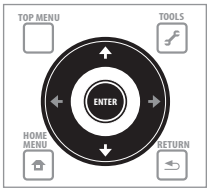
Press **TOOLS**.





2 Select and set the item.

Use ⬆/⬇ to select, then press **ENTER**.



Note

- Items that cannot be changed are displayed in gray. The items that can be selected depend on the player's status.

❖ To change the setting of the selected item

Use ⬅/➡ to change.

❖ To close the TOOLS menu

Press **TOOLS** or **RETURN**.

❖ TOOLS menu item list

Item	Description
Play from Beginning	Play the selected title, track or file from the start.
Slideshow	Play a slideshow of the image files on the selected disc or folder.
Play Mode	Display the Play Mode screen (page 30).
Video Adjust	Display the picture quality adjustment screen (page 39).
Secondary Video	Switch the BD-ROM's secondary video (Picture-in-Picture) (page 29).
Subtitle	Switch the subtitles (page 28).
Angle	Switch the BD-ROM/DVD-Video disc's camera angles (page 28).
Rotate	Rotate the image while playing a slideshow (page 36).
Anamorphic Zoom	Use to view 2.35:1 movies with a front projector equipped with an anamorphic lens (page 51).
Audio Adjust	Display the audio adjustment menu (page 40).
Audio	Switch the audio streams/channels (page 29).
Secondary Audio	Switch the BD-ROM's secondary audio streams/channels (page 29).
Now Playing	Display the playback screen of the currently playing track or file.
Original/Play List	Switch the DVD-R/-RW's (VR format) list screen between the original list and the playlist.
Add to HMG Playlist	Add the selected track or file to the HMG Playlist (page 37).
Delete from HMG Playlist	Delete the selected track or file from the HMG Playlist (page 38).
Output Video Resolution	Switch the output video resolution from the various output terminals (page 24).

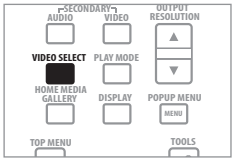
Switching the video output terminal to be viewed

Use the procedure below to switch the video output signal to be viewed between the one output from the **HDMI OUT (MAIN)** terminal, the **HDMI OUT (SUB)** terminal and an analog output terminal (**COMPONENT VIDEO**, **S-VIDEO** or **VIDEO** output terminals).

The settings below are valid for the selected video output terminal.

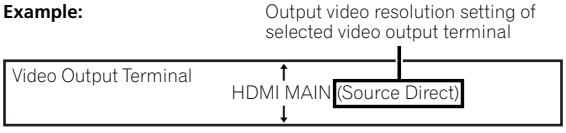
- The output video resolution (below)
- The Lip Sync function (page 41)
- The Pure Audio function (page 52)

▶ **Press VIDEO SELECT.**



- The current video output terminal is displayed on the TV screen and on the player's front panel display.
  To switch the video output terminals, press **VIDEO SELECT** again or press ⬆/⬇.

Example:



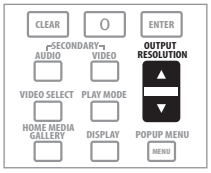
Caution

- The picture may not be displayed for a while when the video output terminal is switched.
- Depending on the player's settings, the picture of a TV connected to a terminal other than the selected video output terminal may not be properly displayed.
- When Pure Audio is set to **Mode 2**, no picture will be output from any video output terminal other than the selected one (page 52).

Switching the output video resolution

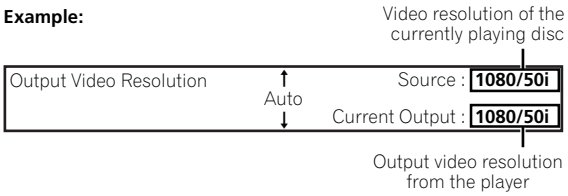
Use the procedure below to switch the output video resolution from the various video output terminals.

▶ **Press OUTPUT RESOLUTION.**



- The current output video resolution setting is displayed on the TV screen and on the player's front panel display.
  To switch the output video resolution, press **OUTPUT RESOLUTION** again or press ⬆/⬇.
- The output video resolution depends on the video output terminal. (page 25)

Example:


Video resolution of the currently playing disc
Output Video Resolution
Auto
Source : 1080/50i
Current Output : 1080/50i
Output video resolution from the player

- The output video resolution setting can also be switched by pressing **RESOLUTION** on the player's front panel.
- The output video resolution setting can also be switched by selecting **Output Video Resolution** from the **TOOLS** menu.

Caution

- On some devices (TV, AV receiver or amplifier, etc.), the video or audio may not be output properly when the resolution is switched. If this happens, use **OUTPUT RESOLUTION** to set a resolution at which the video and audio are properly output.
- When video signals are being output with a resolution of 1080/50i, 1080/50p, 720/50p, 1080/24p, 1080/60i, 1080/60p or 720/60p from the **HDMI OUT** terminals or **COMPONENT VIDEO** output terminals, the picture may be output with an aspect ratio of 16:9, even if the **TV Aspect Ratio** is set to **4:3 (Standard)**.
- The picture may not be displayed for a while when the resolution is switched.

❖ About the frame/field frequency and NTSC/PAL TV systems

By factory default setting, the frame/field frequency is set for an output of 50 Hz, and the video signal output from the **S-VIDEO** and **VIDEO** output terminals is set to be output in the PAL TV system format. When sources with a frame/field frequency of 60 or 24 Hz are played, the output frame/field frequency automatically switches to 60 Hz (or 24 Hz for HDMI, depending on the setting), and the TV system format for the video signal output from the **S-VIDEO** and **VIDEO** output terminals is set to **NTSC on PAL TV**. When playback is stopped, the frame/field frequency and TV system settings remain at the settings last used. The frame/field frequency and TV system settings do not change even when the power is turned off. They only switch when a video material with a different frame/field frequency is played.

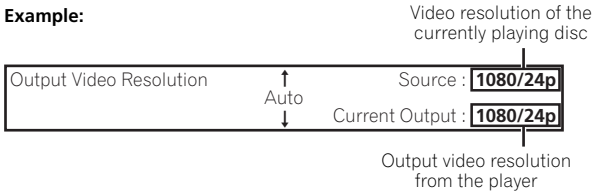
If the picture is not displayed on the TV when a source with a different frame/field frequency is played, use the procedure below to switch the frame/field frequency and TV system settings for the signal output from the player.

Eject the disc, then press the ⏏ **OPEN/CLOSE** button on the front panel while pressing the ▶ button to switch to a different frame/field frequency. The frame/field frequency switches between 50 Hz and 60 Hz each time this operation is performed. The indicator for the frame frequency's current setting lights on the front panel display (page 12).

❖ About Film material

The film material is a video signal with a frame rate of 24 frames/second. For example, these materials include 1080/24p, 720/24p, etc.

Example:


Video resolution of the currently playing disc
Output Video Resolution
Auto
Source : 1080/24p
Current Output : 1080/24p
Output video resolution from the player

❖ To output film material

To output 1080/24p film material from **HDMI OUT** terminals, set the output video resolution to either **Auto**, **1080/24p** or **Source Direct**.

Caution

- 1080/24p signals can only be output from the **HDMI OUT** terminals. They cannot be output from other video terminals.
- When **Auto** is selected, the picture is output at 60 frames/second if your TV is not compatible with 1080/24p signals.
- When **1080/24p** or **Source Direct** is selected, the signals are output as such, even if your TV is not compatible with 1080/24p signals. If the picture is not displayed properly, use **OUTPUT RESOLUTION** to set an output video resolution at which the video and audio signals are properly output.
- Even if **Auto**, **1080/24p** or **Source Direct** is selected, 720/24p video signals are output at 60 frames/second.
- When **1080/24p** is selected, the motion may be unnatural or the picture may not be clear, depending on the source. In this case, set the resolution to something other than **1080/24p**.

❖ About the output video resolution

The resolution setting and the resolution of the picture that is actually output differ for the different terminals. See the table below.

The table below shows the output video resolution for the different terminals when the frame/field frequency of the playback source is 50 Hz on the upper line, the resolutions when the source's frame/field frequency is 60 Hz and 24 Hz on the lower line.

Output video resolution setting	HDMI MAIN, HDMI SUB[1]		COMPONENT/S/VIDEO[1]		—	
	HDMI OUT terminals	COMPONENT VIDEO output terminals[2]	HDMI OUT terminals	COMPONENT VIDEO output terminals[2]	S-VIDEO/ VIDEO output terminal[2]	(TV system)
Auto[3]	Resolution preferred by TV[4,5]	576/50i 480/60i	—	—	576/50i 480/60i	PAL *[6]
576i or 480i	576/50i		576/50i	576/50i		
	480/60i		480/60i	480/60i		
576p or 480p	576/50p		576/50p	576/50p		
	480/60p		480/60p	480/60p		
720p	720/50p		576/50p	576/50p		
	720/60p		720/60p	720/60p[7]		
1080i	1080/50i		576/50p	576/50p		
	1080/60i		1080/60i	1080/60i[7]		
1080p[3]	1080/50p[8]		—	—		
	1080/60p[8]					
1080/24p[3]	1080/50i		—	—		
	1080/24p[5,9,10]					
Source Direct	Resolution recorded on disc[5,9,11]		Resolution recorded on disc[9,11,12]	Resolution recorded on disc[9,11,12]		

1. The video output terminal set at **Video** in the **Setup Navigator** (page 20) or the video output terminal selected with **VIDEO SELECT** (page 24).
2. Depending on the BD, the pictures may not be output.
3. This cannot be selected when the video output terminal is set to **COMPONENT/S/VIDEO**.
4. The pictures are output with the preferred output resolution of the device (TV, AV receiver or amplifier, etc.) connected to the selected video output terminal. However, if devices are connected to both **HDMI MAIN** and **HDMI SUB**, the pictures are output with a resolution which both devices support. If the devices connected to **HDMI MAIN** and **HDMI SUB** support different resolutions, turn off the power of the device not being used so that the picture is output with the optimum resolution for the device to be viewed.
5. For details on the output of film material (1080/24p or 720/24p video signals), see *To output film material* on page 25.
6. Depends on the **NTSC on PAL TV** setting (page 43).
7. DVD-Video or DVD VR format may be output at 480/60p. BDs format may be output at 480/60p. At this time, the video signals from the **HDMI OUT** terminals are output at the same resolution of 480/60p as the video signals output from the **COMPONENT VIDEO** terminals.
8. Depending on the connected HDMI cable, the video signals may not be output.
9. Depending on the connected TV, the video signals may not be output.
10. Sources recorded in 480/60p, 720/60p or 720/24p are output at 1080/60i.
11. 720/24p film material is output at 720/60p.
12. 1080/24p film material is output at 1080/60i.

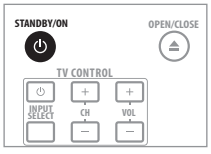
Chapter 4
Playback

Playing discs or files

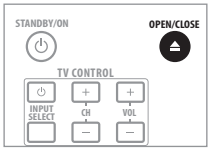
This section describes the player's main operations.

For the types of discs that can be played, see *Playable discs* on page 7. For the types of files that can be played, see *Playable files* on page 9. Video, image and audio files recorded on discs are played with Home Media Gallery (page 34).

1 Press ⏻ STANDBY/ON to turn on the power.
Turn the TV's power on and switch its input beforehand.



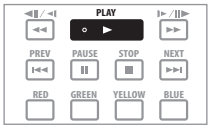
2 Press ⏏ OPEN/CLOSE to open the disc tray and load the disc.



Note

- Load the disc with the printed side facing up.
- Several dozen seconds are required to read the disc. Once reading is completed, the type of disc is displayed on the player's front panel display.

3 Press ► PLAY to play the disc.



To pause, press **II PAUSE** during playback.

To stop, press ■ **STOP** during playback.

Note

- Some discs start playing automatically when the disc tray is closed.
- DVD-Video discs have parental lock features. Input the password registered in the player's settings to unlock the parental lock. For details, see page 48.
- For some BD-R/-RE, playback protection is set for the disc or titles. Input the code number set for the disc to unlock the protection.
- Check *Troubleshooting* on page 64 if video or audio signals are not being output properly.

❖ If the disc menu is displayed

For some discs, the disc menu is displayed automatically when playback starts. The contents of the disc menu and the way to operate differ from disc to disc.

❖ Resuming playback from where it was stopped (resume playback function)

- When ■ **STOP** is pressed during playback, the point at which the disc stopped is stored in the memory. When ► **PLAY** is pressed, playback resumes from that point.
- For audio CDs and audio files, playback starts from the beginning of the track/file that was playing.
- If the stop mode was set while playing a slideshow of image files, playback starts from the image file last displayed.
- To cancel the resume playback function, press ■ **STOP** while playback is stopped.

Note

- The resume playback function is canceled automatically in the following cases:
  - When the disc tray is opened.
  - When the file list window is switched.
  - When the power is turned off. (For BDs and DVDs this does not cancel the resume playback function.)
- The resume playback function cannot be used for some discs.

Forward and reverse scanning

1 During playback, press ◄◄ or ►►.

- The scanning speed switches each time the button is pressed. The speed steps depend on the disc or file (the speed is displayed on the TV screen).
- Forward or reverse scanning is also possible by holding the button down. Normal playback resumes when the button is released.

Note

- No sound is output when scanning BDs, DVDs and video files.
- Sound is output when scanning audio CDs and audio files.
- For some discs, normal playback resumes automatically when the chapter switches.

❖ To resume normal playback

▶ **Press ► PLAY.**

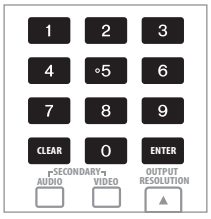
Playing specific titles, chapters or tracks

BD
DVD
AVCHD
CD

Video files
Image files
Audio files

▶ **Input the number of the title, chapter or track you want to play.**

- Use the number buttons (0 to 9) to input the number, then press **ENTER**.



Note

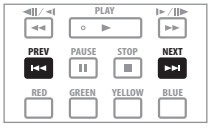
- For some discs, it is not possible to specify and play titles, chapters or tracks.
- Press **CLEAR** to clear the values you have input.

Skipping content

BD
DVD
AVCHD
CD

Video files
Image files
Audio files

▶ **Press I◄◄ PREV or ►►I NEXT.**



- When **►►I NEXT** is pressed, the playback skips ahead to the beginning of the next title/chapter/track/file.
- When **I◄◄ PREV** is pressed, the playback skips back to the beginning of the currently playing title/chapter/track/file. Press twice to skip back to the beginning of the previous title/chapter/track/file.

Note

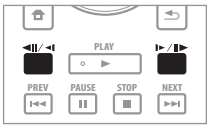
- There are some discs for which skipping is not possible.

Playing in slow motion

BD
DVD
AVCHD
CD

Video files
Image files
Audio files

▶ **While playback is paused, press and hold ◄II/◄I or I►/II►.**



- The speed switches each time the button is pressed (the speed is displayed on the TV screen). The speed steps depend on the disc or file.

Note

- It is not possible to switch the speed during reverse slow motion playback.
- No sound is output during slow motion playback.
- For some discs, normal playback resumes automatically when the chapter switches.
- Reverse slow motion playback is not possible with video files.
- There are some discs for which slow motion playback is not possible.

❖ To resume normal playback

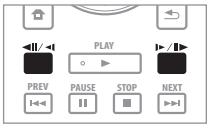
▶ **Press ► PLAY.**

Step forward and step reverse

BD
DVD
AVCHD
CD

Video files
Image files
Audio files

▶ **While playback is paused, press ◄II/◄I or I►/II►.**



- The picture moves a step forward or reverse each time the button is pressed.

Note

- For some discs, normal playback resumes automatically when the chapter switches.
- Reverse step playback is not possible with video files.
- There are some discs for which step forward/reverse playback is not possible.

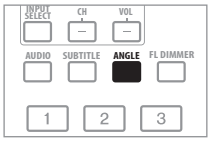
❖ To resume normal playback

▶ **Press ► PLAY.**

Switching the camera angles

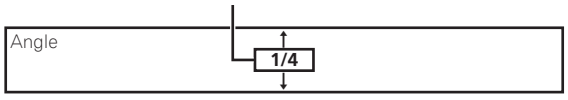
For BD-ROM and DVD-Video discs on which multiple angles are recorded, the angles can be switched during playback.

▶ **During playback, press ANGLE.**



- The current angle and total number of recorded angles are displayed on the TV screen and on the player's front panel display.
  To switch the angles, press **ANGLE** again or press ↑/↓.

Example: Current angle/Total number of recorded angles



- The angles can also be switched by selecting **Angle** from the **TOOLS** menu.

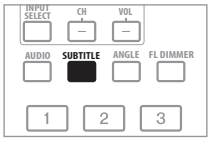
Note

- For some discs, the angle can also be switched on the menu screen.
- Angle mark is displayed for scenes at which multiple angles are recorded if **Angle/Secondary Indicator** is set to **On** (page 44).

Switching the subtitles

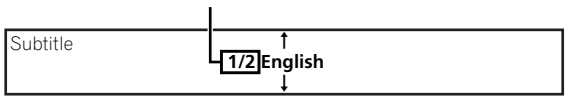
For discs or files on which multiple subtitles are recorded, the subtitles can be switched during playback.

▶ **During playback, press SUBTITLE.**



- The current subtitle and total number of recorded subtitles are displayed on the TV screen and on the player's front panel display.
  To switch the subtitle, press **SUBTITLE** again or press ↑/↓.

Example: Current subtitle/Total number of recorded subtitles



- The subtitles can also be switched by selecting **Subtitle** from the **TOOLS** menu.

Note

- In some cases the subtitle may switch or the switching screen provided on the disc may be displayed immediately, without the current subtitle or the total number of subtitles recorded on the disc being displayed.
- The types of recorded subtitles depend on the disc and file.
- If the subtitles are not switched when **SUBTITLE** is pressed, switch them from the menu screen.

❖ Turning the subtitles off

▶ **Press SUBTITLE, then press CLEAR.**

❖ About displaying external subtitle files while playing DivX media files

In addition to the subtitles recorded in DivX media files, this player also supports the display of external subtitle files. If a file has the same name as a DivX media file aside from the file extension and the extension is one of the extensions listed below, the file is treated as an external subtitle file. Note that DivX media files and external subtitle files must be located in the same folder.
Only one external subtitle file can be displayed on this player. Use a computer, etc., to delete any external subtitle files you do not want to display from the disc.

.srt, .sub, .txt, .smi, .ssa, .ass

If the language code is specified for the external subtitle file, the subtitles are displayed with the font corresponding to that language code. If no language code is specified, the subtitles are displayed with the font corresponding to the language code set at **Subtitle Language** (page 45). The same font is used for the all the languages in each of the groups below.

Group 1	Afrikaans(af/afr), Basque(eu/eus), Catalan(ca/cat), Danish(da/dan), Dutch(nl/nld), English(en/eng), Faroese(fo/fao), Finnish(fi/fin), French(fr/fra), Galician(gl/glg), German(de/deu), Guarani(gn/grn), Icelandic(is/isl), Irish(ga/gle), Italian(it/ita), Latin(la/lat), Norwegian(no/nor), Portuguese(pt/por), Rhaeto-Romance(rm/roh), Scots-Gaelic(gd/gla), Spanish(es/spa), Swahili(sw/swa), Swedish(sv/swe), Zulu(zu/zul)
Group 2	Albanian(sq/sqi), Croatian(hr/hrv), Czech(cs/ces), Hungarian(hu/hun), Polish(pl/pol), Romanian(ro/ron), Slovak(sk/slk), Slovenian(sl/slv)
Group 3	Belarusian(be/bel), Bulgarian(bg/bul), Macedonian(mk/mkd), Moldavian(mo/mol), Russian(ru/rus), Serbian(sr/srp), Ukrainian(uk/ukr)
Group 4	Greek(el/ell)
Group 5	Estonian(et/est), Kurdish(ku/kur), Turkish(tr/tur)

Note

- Depending on the file, the external subtitles may not be displayed properly.

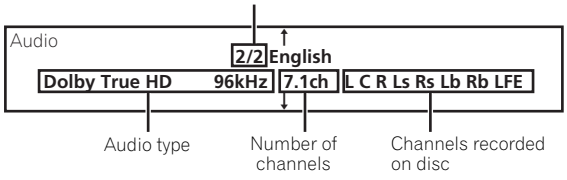
Switching the audio streams/ channels

For discs or files on which multiple audio streams/channels are recorded, audio streams/channels can be switched during playback. Also use this procedure to switch the secondary audio for BD-ROMs on which secondary audio is recorded.

▶ **During playback, press AUDIO.**

- The current audio stream/channel and total number of recorded audio streams/channels are displayed on the TV screen and on the player's front panel display.
  To switch the audio streams/channels, press **AUDIO** again or press ⬆/⬇.
- To switch the secondary audio, press **SECONDARY AUDIO**.

Example: Current audio stream/Total number of recorded audio streams



- The audio streams/channels can also be switched by selecting **Audio** or **Secondary Audio** from the **TOOLS** menu.

Note

- The types of recorded audio streams/channels depend on the disc and file.
- If the audio stream/channel is not switched when **AUDIO** is pressed, switch it from the menu screen.
- In some cases the secondary audio may switch or the switching screen provided on the disc may be displayed immediately, without the current secondary audio or the total number of secondary audio streams recorded on the disc being displayed.
- Some BD-ROMs do not include secondary audio.
- Secondary audio mark S is displayed for scenes at which secondary audio is recorded if **Angle/Secondary Indicator** is set to **On** (page 44).

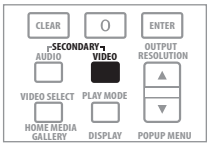
❖ Turning the Secondary Audio off

▶ **Press SECONDARY AUDIO, then press CLEAR.**

Switching the secondary video

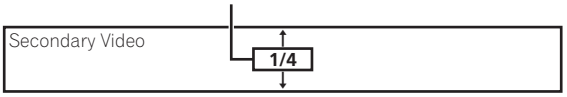
Use the procedure below to switch the secondary video (Picture-in-Picture) recorded on the BD-ROM.

▶ **During playback, press SECONDARY VIDEO.**



- The current secondary video stream and total number of recorded secondary video streams are displayed on the TV screen and on the player's front panel display.
  To switch the secondary video streams, press **SECONDARY VIDEO** again or press ⬆/⬇.

Example: Current secondary video stream/Total number of recorded secondary video streams



- The secondary video streams can also be switched by selecting **Secondary Video** from the **TOOLS** menu.

Note

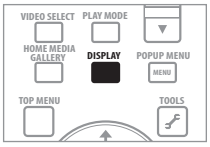
- In some cases the secondary video may switch or the switching screen provided on the disc may be displayed immediately, without the current secondary video or the total number of secondary video streams recorded on the disc being displayed.
- Some BD-ROMs do not include secondary video.
- Secondary video mark S is displayed for scenes at which secondary video is recorded if **Angle/Secondary Indicator** is set to **On** (page 44).

❖ Turning the Secondary Video off

▶ **Press SECONDARY VIDEO, then press CLEAR.**

Displaying the disc information

▶ **Press DISPLAY.**



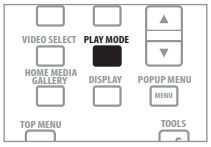
The disc information appears on the TV screen. The information switches each time the button is pressed.

The information display differs during playback and when playback is stopped.

Using the Play Mode functions

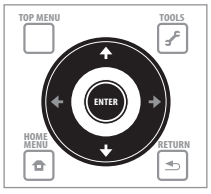
Playing from a specific time (Time Search)

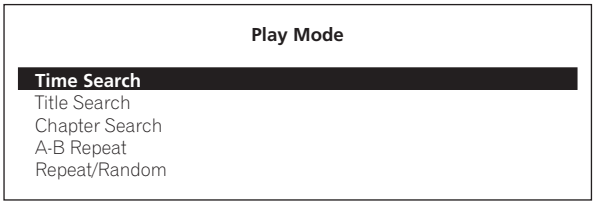
1 During playback, press PLAY MODE to display the Play Mode screen.



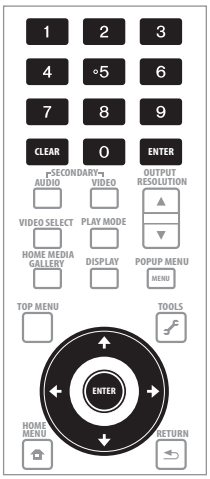
The Play Mode screen can also be displayed by selecting **Play Mode** from the **TOOLS** menu.

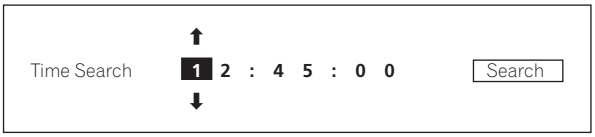
2 Select Time Search.
Use ⬆/⬇ to select, then press **ENTER**.





3 Input the time.
Use the number buttons (0 to 9) or ⬆/⬇ to input the time.
Use ⬅/➡ to move the cursor.





Note

- To play from 45 minutes, input **0**, **0**, **4**, **5**, **0** and **0**, then press **ENTER**.
- To play from 1 hour 20 minutes, input **0**, **1**, **2**, **0**, **0** and **0**, then press **ENTER**.
- Press **CLEAR** to clear the values you have input.

4 Starting playback from the specified time.
Use ⬅/➡ to select **Search**, then press **ENTER**.

❖ Closing the Play Mode screen

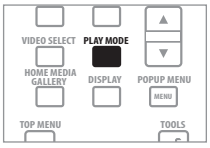
Press **PLAY MODE** or **HOME MENU**.

Note

- There are some discs for which Time Search is not available.

Playing a specific title, chapter or track (Search)

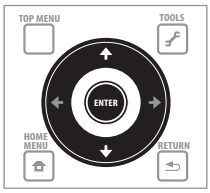
1 Press PLAY MODE to display the Play Mode screen.

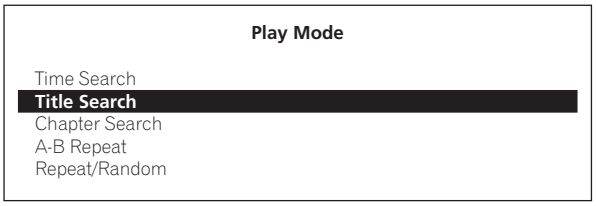


The Play Mode screen can also be displayed by selecting **Play Mode** from the **TOOLS** menu.

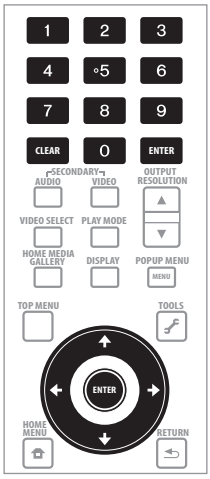
2 Select the type of search.
Use ⬆/⬇ to select, then press **ENTER**.

See the table on page 33 for the search types.





3 Input the number.
Use the number buttons (0 to 9) or ↑/↓ to input the number.
Use ←/→ to move the cursor.



4 Starting playback from the specified title, chapter or track.
Use ←/→ to select **Search**, then press **ENTER**.

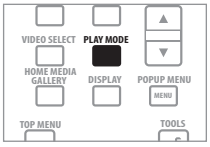
Note

- To search for title 32, input **0**, **3** and **2**, then press **ENTER**.
- There are some discs for which searching is not available.
- Press **CLEAR** to clear the values you have input.

Playing a specific section within a title or track repeatedly (A-B Repeat)

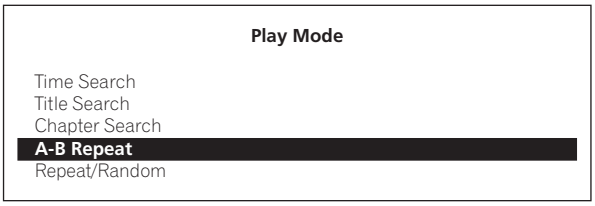
Use this procedure to play a specific section within a title or track repeatedly.

1 During playback, press PLAY MODE to display the Play Mode screen.

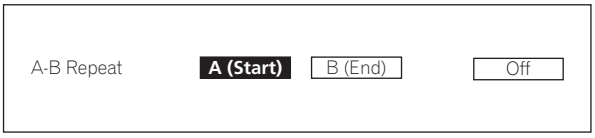


The Play Mode screen can also be displayed by selecting **Play Mode** from the **TOOLS** menu.

2 Select A-B Repeat.
Use ↑/↓ to select, then press **ENTER**.



3 Select the starting point for A-B Repeat.
Use ←/→ to select **A (Start)**, then press **ENTER**.



4 Select the end point for A-B Repeat.
Use ←/→ to select **B (End)**, then press **ENTER**.
A-B Repeat playback starts.

❖ To cancel A-B Repeat play

- Select **Off** from the Repeat/Random screen, then press **ENTER**.
- During playback, press ■ **STOP** or **CLEAR**.

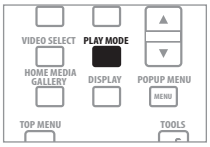
Note

- There are some discs for which A-B Repeat play is not available.
- A-B Repeat play is canceled in the following cases:
  - When the angle is switched (for BD-ROM and DVD-Video discs only).
  - When you search outside the repeat range.
  - When you start other Repeat Play or Random Play.

Playing repeatedly (Repeat Play)

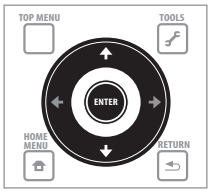
Use this procedure to play the currently playing disc, title, chapter, track or file repeatedly.

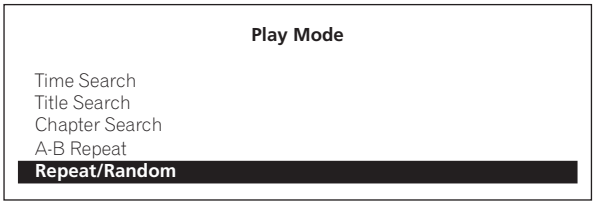
1 During playback, press PLAY MODE to display the Play Mode screen.



The Play Mode screen can also be displayed by selecting **Play Mode** from the **TOOLS** menu.

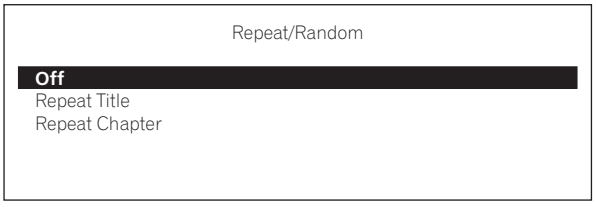
2 Select Repeat/Random.
Use ↑/↓ to select, then press **ENTER**.





3 Select the type of Repeat Play.
Use ↑/↓ to select, then press **ENTER**.

See the table on page 33 for the types of Repeat Play.



❖ To cancel Repeat Play

- Select **Off** from the Repeat/Random screen, then press **ENTER**.
- During playback, press ■ **STOP** or **CLEAR**.

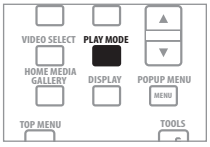
Note

- There are some discs and files for which Repeat Play is not available.
- The type of repeat modes depends on the disc and file being played. See the table on page 33.
- Repeat Play is canceled in the following cases:
  - When the angle is switched (for BD-ROM and DVD-Video discs only).
  - When you search outside the repeat range.
  - When you start other Repeat Play or Random Play.

Playing in random order (Random Play)

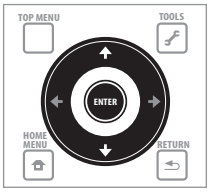
Use this procedure to play the tracks or files in random order.

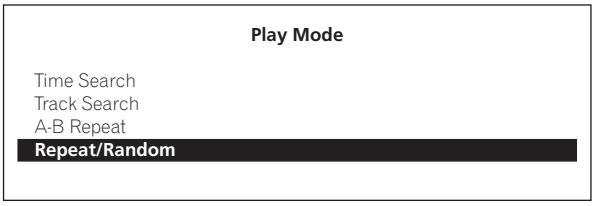
1 During playback, press PLAY MODE to display the Play Mode screen.



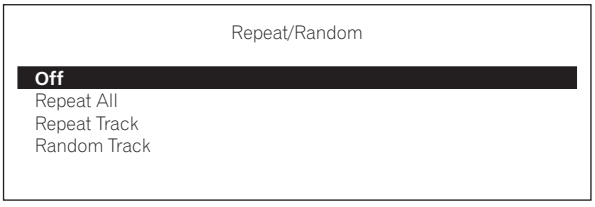
The Play Mode screen can also be displayed by selecting **Play Mode** from the **TOOLS** menu.

2 Select Repeat/Random.
Use ↑/↓ to select, then press **ENTER**.





3 Select the Random Play.
Use ↑/↓ to select, then press **ENTER**.



❖ To cancel Random Play

- Select **Off** from the Repeat/Random screen, then press **ENTER**.
- During playback, press ■ **STOP** or **CLEAR**.

Note

- There are some discs and files for which Random Play is not available.
- Random Play is canceled in the following cases:
  - When you use the search function.
  - When you start Repeat Play.

About Play Mode types

The functions that can be used differ according to the type of disc and file. In some cases, some of the functions cannot be used. Check the usable functions on the table below.

	Play Mode type	Mark[1]	Disc/file type								
			BD-ROM[2]	BD-R BD-RE	DVD-Video[2]	DVD-R DVD-RW (VR format)	AVCHD	Video file	Image file	Audio file	Audio CD
Repeat Play	Playing a specific section within a title or track repeatedly (A-B Repeat)	A-B	✓	✓	✓	✓	✓	✓	✗	✗	✓
	Playing a title repeatedly (Title Repeat)	T	✓	✓	✓	✓	✓	✓	✗	✗	✗
	Playing a chapter repeatedly (Chapter Repeat)	C	✓	✓	✓	✓	✓	✗	✗	✗	✗
	Playing a track or file repeatedly (Track Repeat)	1	✗	✗	✗	✗	✗	✗	✗	✓	✓
	Playing all the titles, tracks or files on the disc repeatedly (All Repeat)		✗	✓	✗	✓[3]	✗	✓[4]	✓[4]	✓[5]	✓[6]
Random Play	Playing the tracks or files in random order (Random Track)	RDM	✗	✗	✗	✗	✗	✗	✗	✓	✓
	Playing the tracks or files in random order (Random File)	RDM	✗	✗	✗	✗	✗	✗	✓	✗	✗
Search	Playing from a specific time (Time Search)	—	✓	✓	✓	✓	✓	✓	✗	✗	✓
	Playing a specific title (Title Search)	—	✓	✓	✓	✓	✓	✗	✗	✗	✗
	Playing a specific chapter (Chapter Search)	—	✓	✓	✓	✓	✓	✗	✗	✗	✗
	Playing a specific track (Track Search)	—	✗	✗	✗	✗	✗	✗	✗	✗	✓

1. The type of Play Mode is indicated by the mark.
2. For BD-ROM and DVD-Video discs, some of the functions cannot be used with some titles.
3. The original titles are played repeatedly. However, the playlist titles cannot be played repeatedly.
4. The files in the folder are played repeatedly.
5. The files in the folder or HMG Playlist are played repeatedly.
6. The tracks in the disc or HMG Playlist are played repeatedly.

04

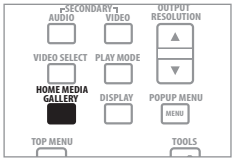
Playing from the Home Media Gallery

The Home Media Gallery lets you display a list of the titles, tracks or files recorded on the disc. The discs that can be played from the Home Media Gallery are as shown below (see also page 7).

- BD-R/-RE discs
- DVDs recorded in VR format
- Audio CDs (CD-DAs and DTS-CDs)
- DVDs/CDs on which only data files of video, image or audio files, etc. are recorded

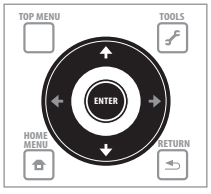
Playing discs

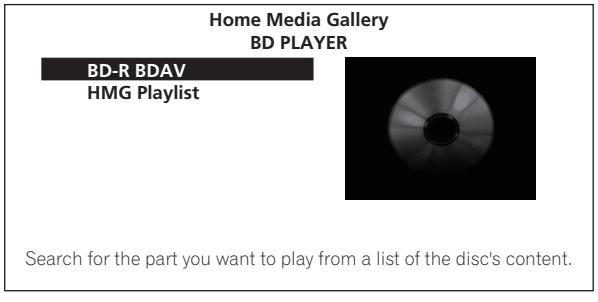
1 Press HOME MEDIA GALLERY to display the Home Media Gallery.



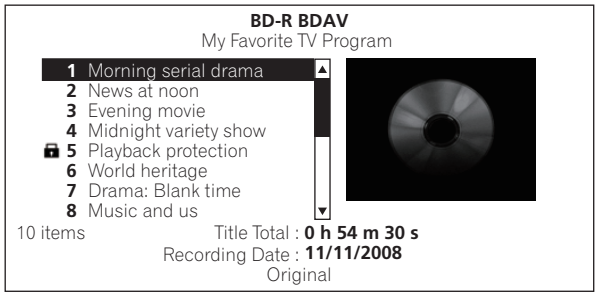
The Home Media Gallery can also be displayed by selecting **Home Media Gallery** from Home Menu then pressing **ENTER**.

2 Select the disc.
Use ↑/↓ to select, then press **ENTER**.





3 Select the title or track to be played.
Use ↑/↓ to select, then press **ENTER**.



Playback starts.

❖ Closing the Home Media Gallery

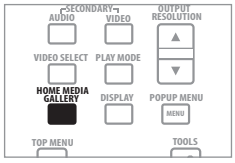
Press **HOME MEDIA GALLERY** or **HOME MENU**.

Note

- When playing an audio CD (CD-DA or DTS-CD), the Now Playing screen is displayed.
- Some BD-R/-RE discs have playback protection. To cancel the protection, input the password set for the disc.
- To play DVD-R/-RW (VR format) playlists, switch to the playlist using the **Original/Play List** command on the **TOOLS** menu (page 23).

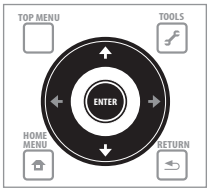
Playing video files

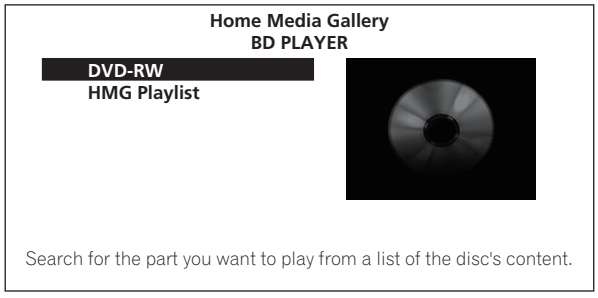
1 Press HOME MEDIA GALLERY to display the Home Media Gallery.



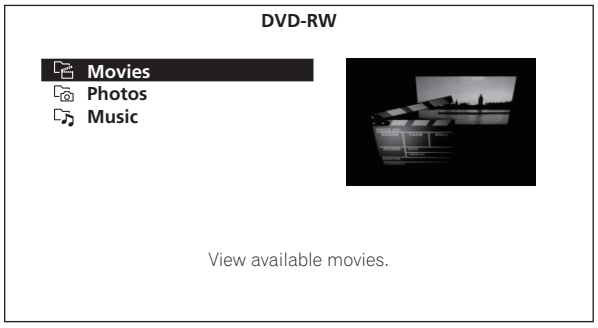
The Home Media Gallery can also be displayed by selecting **Home Media Gallery** from Home Menu then pressing **ENTER**.

2 Select the disc.
Use ↑/↓ to select, then press **ENTER**.



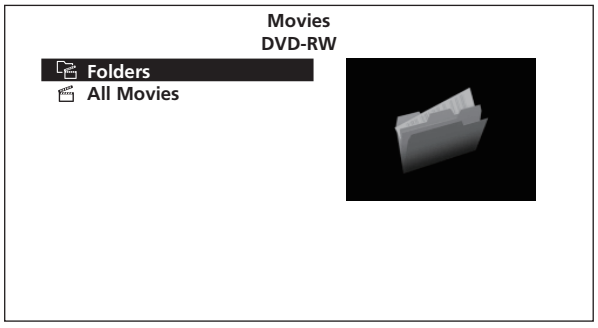


3 Select Movies.
Use ⬆/⬇ to select **Movies**, then press **ENTER**.



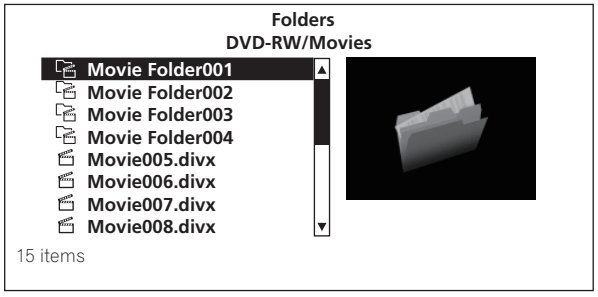
4 Select Folders or All Movies.
Use ⬆/⬇ to select, then press **ENTER**.

- **Folders** – The files in the selected folder are displayed.
- **All Movies** – All the recorded files are displayed.



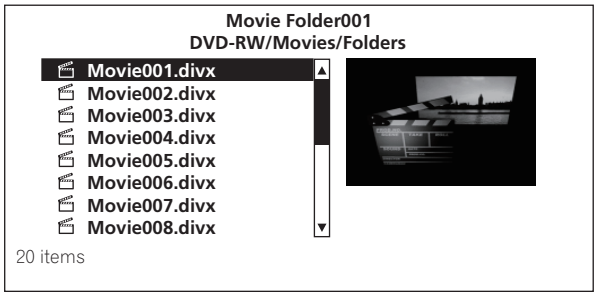
If you have selected **All Movies**, proceed to step 6.

5 Select the folder containing the file you want to play.
Use ⬆/⬇ to select, then press **ENTER**.



A list of the files and folders in the selected folder is displayed.

6 Select and set the file you want to play.
Use ⬆/⬇ to select, then press **ENTER**.



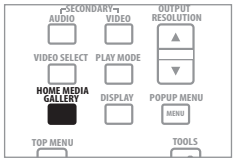
Playback starts from the selected file, and continues until the end of the list is reached. Use ⏮/⏭ to play the previous or next file.

Note

- It may take a few seconds before playback starts. This is normal.
- It may not be possible to play some files properly.
- The number of views may be restricted (page 9).

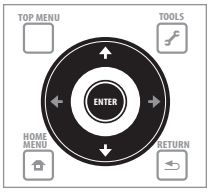
Playing image files

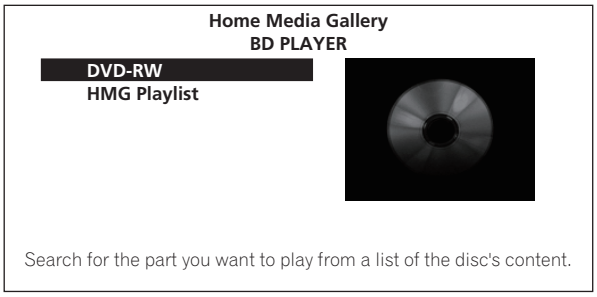
1 Press HOME MEDIA GALLERY to display the Home Media Gallery.



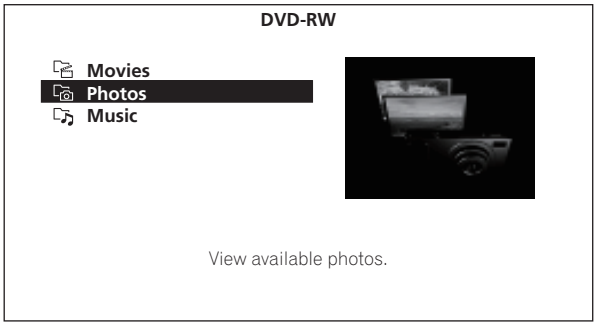
The Home Media Gallery can also be displayed by selecting **Home Media Gallery** from the Home Menu then pressing **ENTER**.

2 Select the disc.
Use ⬆/⬇ to select, then press **ENTER**.



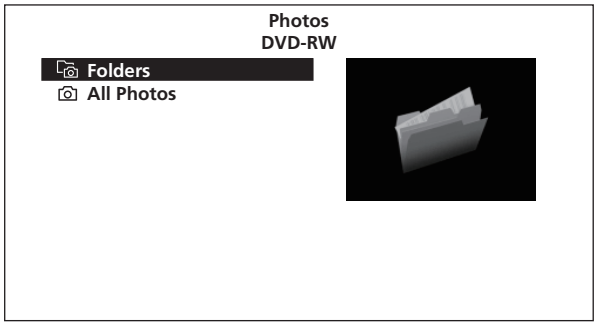


3 Select Photos.
Use ⬆/⬇ to select **Photos**, then press **ENTER**.



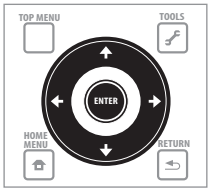
4 Select Folders or All Photos.
Use ⬆/⬇ to select, then press **ENTER**.

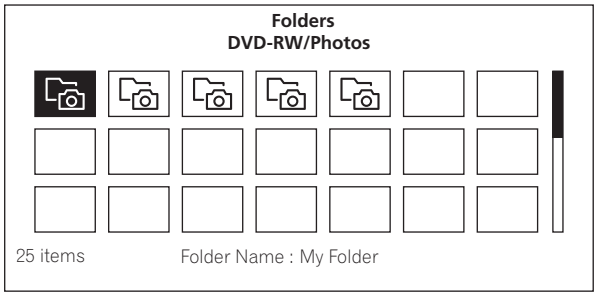
- **Folders** – The files in the selected folder are displayed.
- **All Photos** – All the recorded files are displayed.



If you have selected **All Photos**, proceed to step 6.

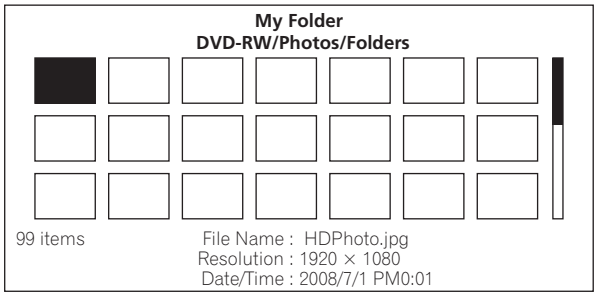
5 Select the folder containing the file you want to play.
Use ⬆/⬇/⬅/➡ to select, then press **ENTER**.





A list of the files and folders in the selected folder is displayed.

6 Select and set the file you want to play.
Use ⬆/⬇/⬅/➡ to select, then press **ENTER**.



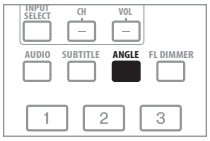
A slideshow starts from the selected file, and continues until the end of the list is reached. Use ⏮/⏭ to display the previous or next file.

❖ About Slideshow

A display of the files on the disc or in the folder that switches automatically.

❖ Rotating images

▶ **Press ANGLE while playing a slideshow.**

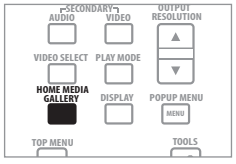


- **The image rotates each time the button is pressed (90° → 180° → 270° → 0° → ...).**

The image can also be rotated by selecting **Rotate** from the **TOOLS** menu.

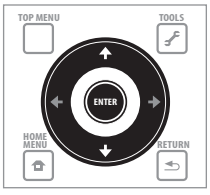
Playing audio files

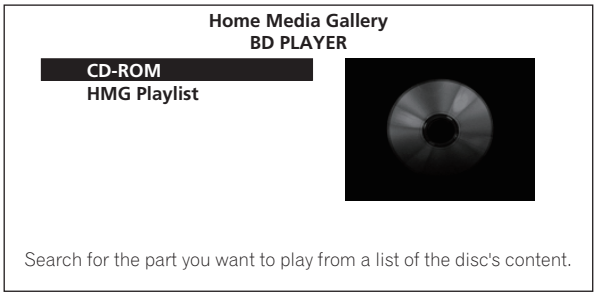
1 Press HOME MEDIA GALLERY to display the Home Media Gallery.



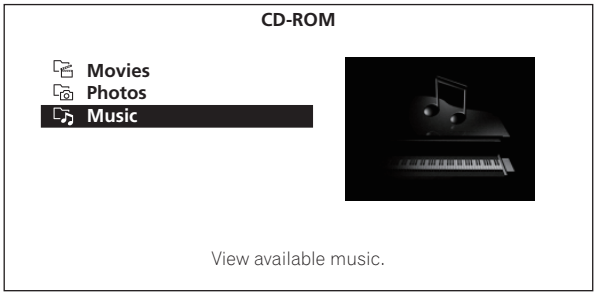
The Home Media Gallery can also be displayed by selecting **Home Media Gallery** from Home Menu then pressing **ENTER**.

2 Select the disc.
Use ⬆/⬇ to select, then press **ENTER**.



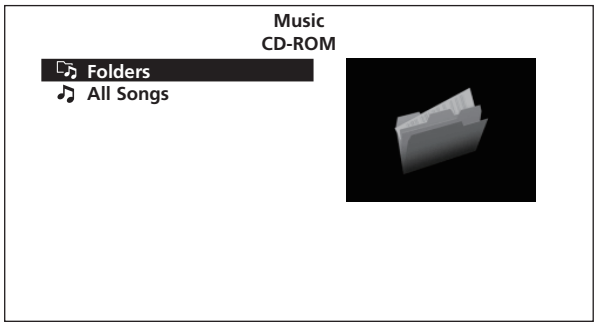


3 Select Music.
Use ⬆/⬇ to select **Music**, then press **ENTER**.



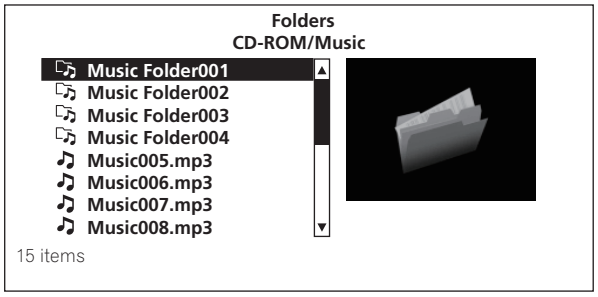
4 Select Folders or All Songs.
Use ⬆/⬇ to select, then press **ENTER**.

- **Folders** – The files in the selected folder are displayed.
- **All Songs** – All the recorded files are displayed.



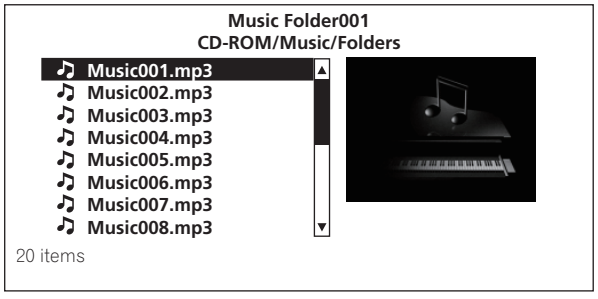
If you have selected **All Songs**, proceed to step 6.

5 Select the folder containing the file you want to play.
Use ⬆/⬇ to select, then press **ENTER**.

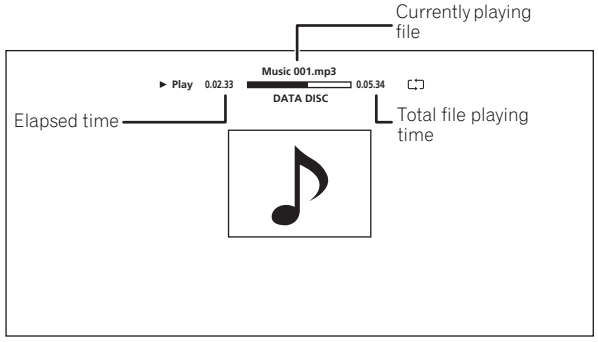


A list of the files and folders in the selected folder is displayed.

6 Select and set the file you want to play.
Use ⬆/⬇ to select, then press **ENTER**.



Playback starts from the selected file, and continues until the end of the list is reached. Use ⏮/⏭ to play the previous or next file. The Now Playing screen (shown below) is displayed.



Playing in the desired order (HMG Playlist)

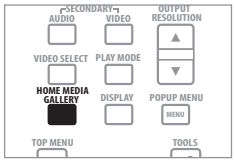
The discs that can add tracks and files to the HMG (Home Media Gallery) Playlist are as shown below.

- Audio CDs (CD-DAs and DTS-CDs)
- DVDs/CDs on which audio files are recorded

❖ Adding tracks/files

Use this procedure to add tracks and files, and create the HMG Playlist.

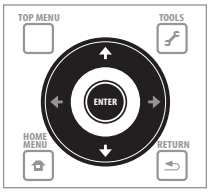
1 Press HOME MEDIA GALLERY to display the Home Media Gallery.

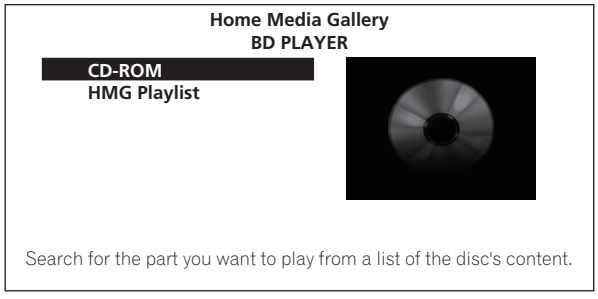


The Home Media Gallery can also be displayed by selecting **Home Media Gallery** from Home Menu pressing **ENTER**.

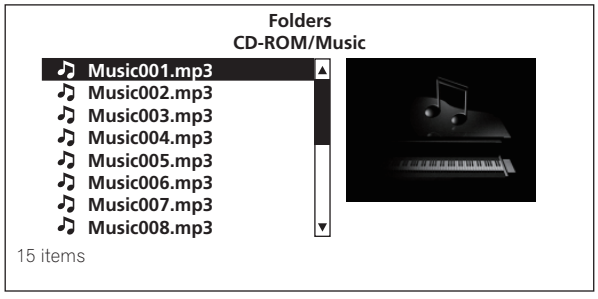
2 Select the disc.
Load the disc beforehand.

Use ⬆/⬇ to select, then press **ENTER**.

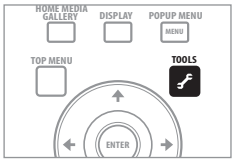




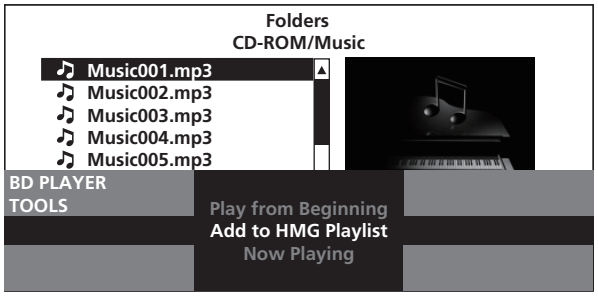
3 Select the track/file to be added.
Use ⬆/⬇ to select.



4 Press TOOLS to display the TOOLS menu.



5 Select Add to HMG Playlist.
Use ↑/↓ to select, then press **ENTER**.



The track or file selected in step 3 is added to the HMG Playlist. To add more tracks or files, repeat steps 3 to 5.

❖ To add the currently playing track/file to the HMG Playlist

▶ While the track/file is playing, press TOOLS to display the TOOLS menu.

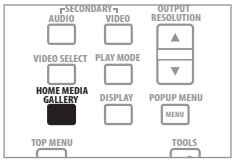
▶ Use ↑/↓ to select Add to HMG Playlist, then press ENTER.

Note

- A maximum of 24 tracks/files can be added to the HMG Playlist.
- The HMG Playlist is cleared in the following cases:
  - When the power is turned off.
  - When the disc tray is opened.

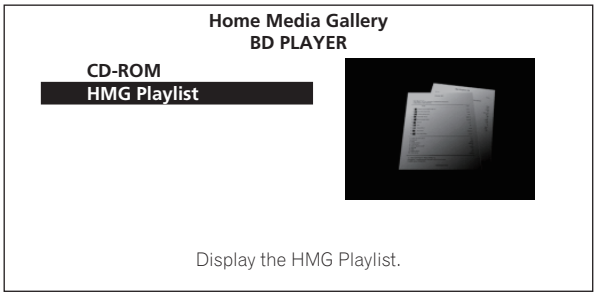
❖ Playing the HMG Playlist

1 Press HOME MEDIA GALLERY to display the Home Media Gallery.

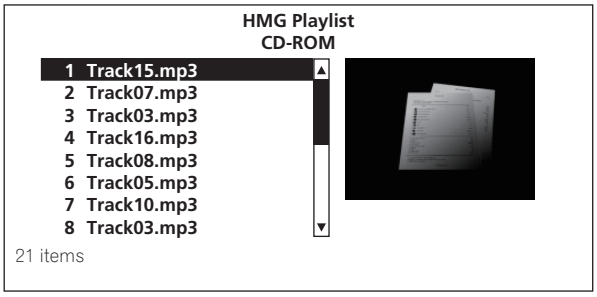


The Home Media Gallery can also be displayed by selecting **Home Media Gallery** from Home Menu pressing **ENTER**.

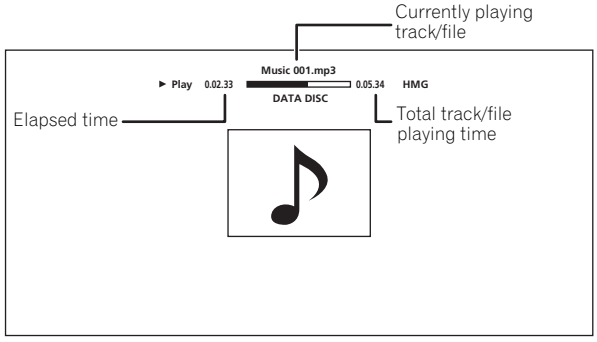
2 Select HMG Playlist.
Use ↑/↓ to select, then press **ENTER**.



3 Select the track/file to be played.
Use ↑/↓ to select, then press **ENTER**.



Playback starts from the selected track/file, and continues until the end of the list is reached. Use ⏮/⏭ to play the previous or next track/file. The Now Playing screen (shown below) is displayed.



Press ■ **STOP** to stop playback. When playback of an audio CD is stopped, the Now Playing screen turns off. When playback of an audio file is stopped, the HMG Playlist screen reappears.

❖ Deleting tracks/files from the HMG Playlist

▶ Select the track/file to be deleted, then press TOOLS to display the TOOLS menu.

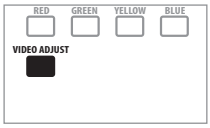
▶ Use ↑/↓ to select Delete from HMG Playlist, then press ENTER.

Chapter 5
Adjusting audio and video

Adjusting the video

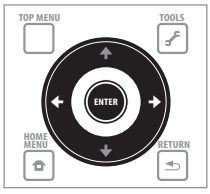
The quality of the playback picture can be adjusted according to the TV you are using.

1 During playback, press VIDEO ADJUST to display the Video Adjust screen.



The Video Adjust screen can also be displayed by selecting **Video Adjust** from the **TOOLS** menu.

2 Select a preset.



Select using ⬅/➡ according to the TV being used.

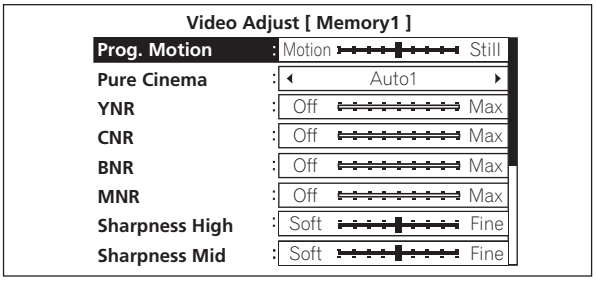
- **LCD** – Select this when connected to a liquid crystal display TV.
- **PDP** – Select this when connected to a plasma TV of another brand.
- **Pioneer PDP** – Select this when connected to a Pioneer plasma TV.
- **Projector** – Select this when connected to a front projector.
- **Professional** – With this setting, video signal processing is restrained. Select this when connected to a professional monitor.
- **Memory1 to 3** – Picture quality settings with adjusted parameters can be stored in the memory. For a description of the parameters, see *When Memory1, 2 or 3 is selected* below.

❖ When Memory1, 2 or 3 is selected

1 Select Adjustments.
Use ⬇ to select **Adjustments**, then press **ENTER**.

A detailed settings screen appears.

2 Select the item to be adjusted.
Use ⬆/⬇ to select.


Video Adjust [Memory1]
Prog. Motion : Motion Still
Pure Cinema : Auto1
YNR : Off Max
CNR : Off Max
BNR : Off Max
MNR : Off Max
Sharpness High : Soft Fine
Sharpness Mid : Soft Fine

3 Adjust the picture quality.
When ⬅/➡ are pressed, the adjustments can be made viewing the picture. The detailed settings screen reappears when **ENTER** is pressed.

- **Prog.Motion** – Adjust according to the type of image (moving or still image). This is effective mainly when outputting video materials as progressive images.
- **Pure Cinema** – This setting optimizes the operation of the progressive scanning circuit for playing film materials. Normally set it to **Auto1**. If the picture seems unnatural, switch this to **Auto 2**, **On** or **Off** (page 40).
- **YNR** – Reduces noise in the luminance (Y) signal.
- **CNR** – Reduces noise in the chroma (C) signal.
- **BNR** – Reduces the block noise (block-shaped distortion generated upon MPEG compression).
- **MNR** – Reduces the mosquito noise (distortion along the contours of the picture generated upon MPEG compression).
- **Sharpness High** – Adjusts the sharpness of the high-frequency (detailed) elements in the picture.
- **Sharpness Mid** – Adjusts the sharpness of the mid-frequency (less detailed) elements in the picture.
- **Detail** – Adjusts the picture's contours.
- **White Level** – Adjusts the level of the white portions.
- **Black Level** – Adjusts the level of the black portions.
- **Black Setup** – Select the black level as the setup level. Normally select **0 IRE**. If the black is too dense and all the dark colors are displayed in a uniform black due to the combination with the connected TV, select **7.5 IRE**.
- **Gamma Correction** – Adjusts how the dark portions of the picture look.
- **Hue** – Adjusts the balance between green and red.
- **Chroma Level** – Adjusts the density of the colors.

Note

- **Prog.Motion** and **Pure Cinema** have the effect only for pictures recorded in the interlaced scan format (576i/480i or 1080i signals).
- **Prog.Motion** is disabled when **Pure Cinema** is set to **On**.

- **Black Setup** has the effect only for pictures output from the **VIDEO** and **S-VIDEO** output terminals, and for NTSC signals output.
- The items below do not apply to video signals output from the **VIDEO** and **S-VIDEO** output terminals, nor to 480i/576i video signals output from the **COMPONENT VIDEO** output terminal (except when the **Output Video Resolution** is set to 480i/576i (page 24)).
  - **Sharpness High**
  - **Sharpness Mid**
  - **Detail**
  - **White Level**
  - **Black Level**
  - **Gamma Correction**
  - **Hue**
  - **Chroma Level**

❖ Closing the Video Adjust screen

Press **HOME MENU**.

❖ About Pure Cinema

There are two types of video signals:

- **Video material** – Video signals recorded at 25 or 30 frames/second
- **Film material** – Video signals recorded at 24 frames/second

"Pure Cinema" uses signal processing suited for "film material" when converting 576i/480i or 1080i interlaced video signals into progressive video signals, resulting in clear picture reproduction without losing the quality of the material.

is displayed on the disc information screen when playing the "film material" pictures of BD-ROM, BD-R/-RE and DVD-Video discs (page 29).

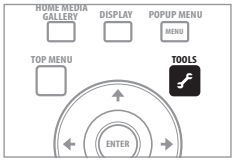
Adjusting the audio

Adjusting the Audio DRC

Audio DRC (Dynamic Range Control) has the effect of playing loud sounds softly and soft sounds loudly. Adjust the setting for example when viewing movies late at night and the dialogs are difficult to hear.

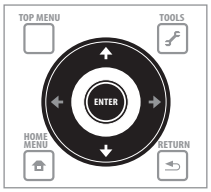
1 During playback, display the TOOLS menu.

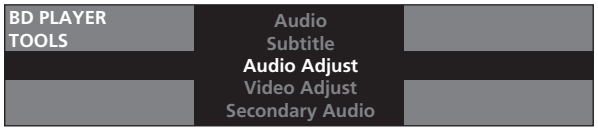
Press **TOOLS**.



2 Select and set Audio Adjust.

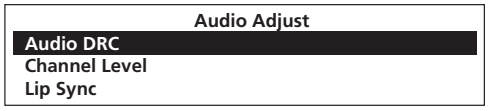
Use ↑/↓ to select, then press **ENTER**.



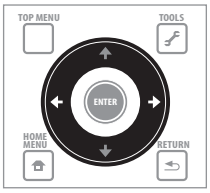


3 Select and set Audio DRC.

Use ↑/↓ to select, then press **ENTER**.



4 Adjust the setting.



Use ←/→ to switch between **Off**, **Low**, **Medium**, **High** and **Auto**.

❖ Closing the Audio DRC screen

Press **ENTER** or **HOME MENU**.

Note

- This only affects the Dolby TrueHD, Dolby Digital Plus and Dolby Digital audio signals of BDs, DVDs and video files.
- When **Auto** is selected, the setting has the same effect as **High** or **Off** for Dolby TrueHD signals, depending on the content. For Dolby Digital Plus and Dolby Digital, the setting has the same effect as **Off**.
- Audio DRC affects the audio signals output from the following audio output terminals:
  - Analog audio signals output from the **AUDIO OUT (7.1 ch)** terminals.
  - Linear PCM audio signals output from the **DIGITAL OUT** terminals or **HDMI OUT** terminals.
- The effect may be weak for some discs.

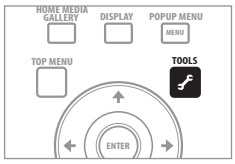
Adjusting the output level of the different speakers during BD/DVD playback (Channel Level)

Caution

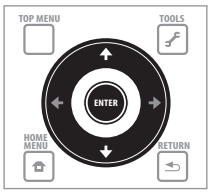
- **Channel Level** of the speakers set to **None** or **No** at **Speaker Setup** cannot be adjusted (page 46).

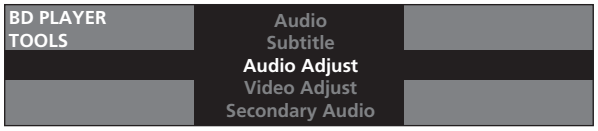
1 During playback, display the TOOLS menu.

Press **TOOLS**.

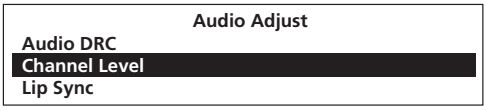


2 Select and set Audio Adjust.
Use ↑/↓ to select, then press **ENTER**.



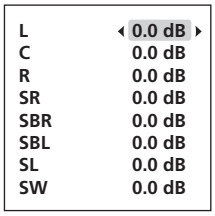


3 Select and set Channel Level.
Use ↑/↓ to select, then press **ENTER**.



4 Adjust the output level.
Use ↑/↓ to select, ←/→ to adjust.

The output levels of the **L**, **C**, **R**, **SL**, **SR**, **SBL**, **SBR** and **SW** speakers can be adjusted within the range of –6.0 dB to +6.0 dB.



5 Press ENTER to set.

Note

- The adjustment of **Channel Level** is only applicable to the sound output from **AUDIO OUT (7.1 ch)**.
- This cannot be adjusted when in the following cases:
  - **Output Terminal** is set to **HDMI MAIN** or **DIGITAL AUDIO** (page 43).
  - **Audio Output Mode** is set to **2 Channel** (page 44).
  - **Channel Level** is set to **Fix** (page 44).

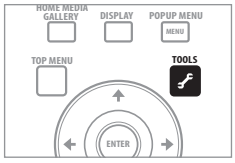
❖ Closing the Channel Level screen

Press **HOME MENU**.

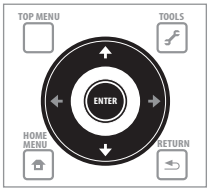
Adjusting the audio delay (Lip Sync)

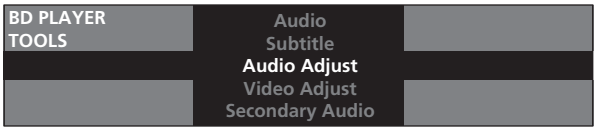
Adjust the audio delay for the selected video output terminal if the video and audio are not synchronized.

1 During playback, display the TOOLS menu.
Press **TOOLS**.

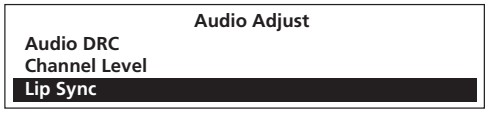


2 Select and set Audio Adjust.
Use ↑/↓ to select, then press **ENTER**.





3 Select and set Lip Sync.
Use ↑/↓ to select, then press **ENTER**.

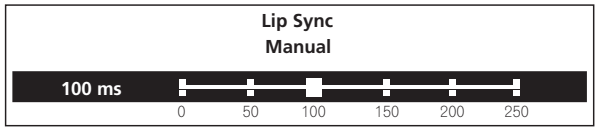


4 Select Auto or Manual.
Use ←/→ to select.

- **Auto** – The player automatically adjusts the timing of the video and audio when connected to a device equipped with the HDMI Auto Lipsync Correction feature using an HDMI cable.
- **Manual** – Adjust manually while viewing the video.

If you have selected **Manual**, proceed to step 5.

5 Adjusting the amount of audio delay.
Press ↓, then use ←/→ to adjust.



The audio delay can be adjusted from 0 to 250 ms in steps of 5 ms.

Note

- The **Lip Sync** adjustment is only applicable to the output terminal set at **Output Terminal** (page 43).
- The sound may be interrupted while setting the delay.

❖ Closing the Lip Sync screen

Press **ENTER** or **HOME MENU**.

Chapter 6

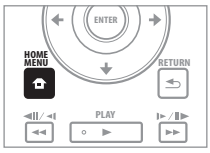
Advanced settings

Changing the settings

Operating the Initial Setup screen

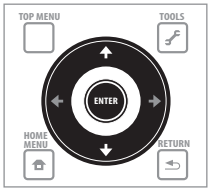
1 When playback is stopped, display the Home Menu screen.

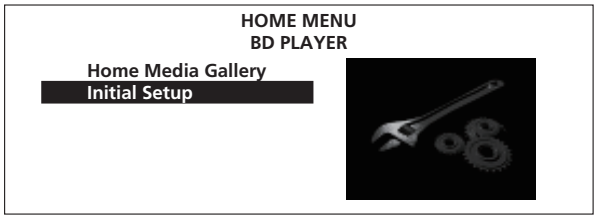
Press **HOME MENU**.



2 Select and set Initial Setup.

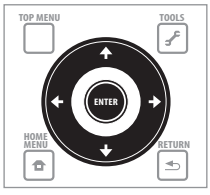
Use ⬆/⬇ to select, then press **ENTER**.

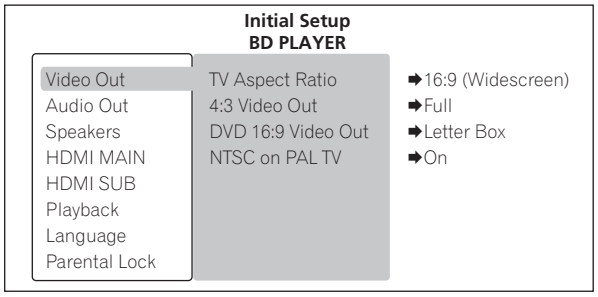




3 Select the item and change the setting.

Use ⬆/⬇/⬅/➡ to select, then press **ENTER**.





❖ Closing the Initial Setup screen

Press **HOME MENU**.

Note

- Items that cannot be changed are indicated in gray. The items that can be selected depend on the player's status.
- In Options, the factory default settings are indicated in bold.

	Setting	Options	Explanation
Video Out	TV Aspect Ratio	**16:9 (Widescreen)**	Select this when connected to a wide (16:9) TV.
		4:3 (Standard)	Select this when connected to a conventional TV.
	4:3 Video Out	**Full**	4:3 pictures are displayed over the entire screen.
		Normal	4:3 pictures are displayed with vertical black bars along the sides. Select this when you cannot switch the aspect ratio to 4:3 on the TV.
	4:3 Video Out is only valid when **TV Aspect Ratio** is set to **16:9 (Widescreen)**.		
	DVD 16:9 Video Out	**Letter Box**	16:9 pictures are displayed with black bars at the top and bottom when viewing on a 4:3 screen.
		Pan & Scan	The picture is displayed over the entire screen, with the left and right sides of the 16:9 picture cropped. Select this to view 4:3 pictures over the entire screen. For some discs, the picture will be displayed in the **Letter Box** mode even if **Pan & Scan** is set.
	• **DVD 16:9 Video Out** is only valid when **TV Aspect Ratio** is set to **4:3 (Standard)**. • **DVD 16:9 Video Out** is only valid when playing 16:9 pictures of DVD-Video discs. When other 16:9 pictures are played, they are output in the **Letter Box** mode.		
	NTSC on PAL TV	**On**	Select this when connected to a PAL-only TV. The picture is displayed correctly on the PAL-only TV even when playing a source with a frame/field rate other than 50 Hz.
		Off	Select this when connected to an NTSC-compatible TV.
	Many recent PAL TVs support the input of NTSC signals, in which case this can be set to **Off**. Also check your TV's operating instructions.		
Audio Out	Output Terminal	**HDMI MAIN**	Select this to output audio signals from the **HDMI OUT (MAIN)** terminal.
		DIGITAL AUDIO	Select this to output audio signals from the **DIGITAL OUT** terminals.
		ANALOG AUDIO	Select this to output audio signals from the **AUDIO OUT (7.1 ch)** terminals.
	• The optimum audio signals for the audio format and the player's settings are output from the output terminal(s) set here. • When **HDMI MAIN** or **DIGITAL AUDIO** is selected at **Output Terminal**, linear PCM audio signals (2 channels) are output from all terminals other than the ones selected at **Output Terminal**. • When **ANALOG AUDIO** is selected at **Output Terminal**, no audio signals are output from the **HDMI OUT** or **DIGITAL OUT** terminals. • To listen to the device connected to the **HDMI OUT (SUB)** terminal, select **HDMI MAIN** and turn off the power of the device connected to the **HDMI OUT (MAIN)** terminal.		
	Dolby Digital Out * Only valid for the **DIGITAL OUT** terminals.	**Dolby Digital 1**	Dolby Digital audio signals are output. With BD-ROMs, the secondary audio and interactive audio are mixed for output.
		Dolby Digital 2	Dolby Digital audio signals are output. With BD-ROMs, the signals are output without mixing the secondary audio and interactive audio signals.
		Dolby Digital → PCM	Select this when the connected AV receiver or amplifier, etc., is not compatible with Dolby Digital audio signals. The Dolby Digital audio signals are converted into linear PCM audio signals for output.
	DTS Out * Only valid for the **DIGITAL OUT** terminals.	**DTS 1**	DTS Digital Surround audio signals are output. With BD-ROMs, the secondary audio and interactive audio are mixed for output.
		DTS 2	DTS Digital Surround audio signals are output. With BD-ROMs, the signals are output without mixing the secondary audio and interactive audio signals.
		DTS → PCM	Select this when the connected AV receiver or amplifier, etc., is not compatible with DTS Digital Surround audio signals. The DTS Digital Surround audio signals are converted into linear PCM audio signals for output.
	AAC Out * Only valid for the **DIGITAL OUT** terminals.	AAC	Select this when the connected AV receiver or amplifier, etc., is compatible with AAC audio signals. The AAC audio signals are output.
		AAC → PCM	Select this when the connected AV receiver or amplifier, etc., is not compatible with AAC audio signals. The AAC audio signals are converted into linear PCM audio signals for output.
	DTS Downmix	**Stereo**	DTS-HD Master Audio signals, DTS-HD High Resolution Audio signals or DTS Digital Surround audio signals converted to linear PCM audio signals are converted into 2-channel (stereo) signals for output.
		Lt/Rt	DTS-HD Master Audio signals, DTS-HD High Resolution Audio signals or DTS Digital Surround audio signals converted to linear PCM audio signals are converted into 2-channel signals compatible with Dolby Surround for output (when the connected AV receiver or amplifier, etc., is compatible with Dolby Pro Logic, the AV receiver or amplifier outputs the linear PCM audio signals as surround audio signals).

	Setting	Options	Explanation
Speakers	Audio Output Mode * Only valid for the **AUDIO OUT (7.1 ch)** terminals.	**2 Channel**	Select this when the TV's analog 2-channel (stereo) audio input terminals are connected to the player's **AUDIO OUT (7.1 ch)** terminals.
		Multi-channel	Select this when the multi-channel audio input terminals of an AV receiver or amplifier, etc., are connected to the player's **AUDIO OUT (7.1 ch)** terminals.
	Speaker Setup * Only valid for the **AUDIO OUT (7.1 ch)** terminals.	Set whether or not speakers are connected to the AV receiver or amplifier, as well as the size of the speakers. For details, see *Changing the speaker setup* on page 46.	
	Speaker Distance * Only valid for the **AUDIO OUT (7.1 ch)** terminals.	Specify the distance of your speakers from your listening position (page 46).	
	Channel Level * Only valid for the **AUDIO OUT (7.1 ch)** terminals.	**Fix**	The output for the various speakers is set to the maximum.
		Variable	The output level of the various speakers is set within the range of –6.0 dB to +6.0 dB (in 0.5 dB steps) (page 46).
HDMI MAIN/HDMI SUB	HDMI High Speed Transmission	On	Select this when connected with a High Speed HDMI™ cable (page 14).
		Off	Select this when connected with a Standard HDMI™ cable (page 14).
	The player's setting screen is closed if the output video resolution is switched by changing the **HDMI High Speed Transmission** setting.		
	HDMI Color Space	**Auto**	Select this to automatically switch the video output between YCbCr and RGB signals according to the connected equipment.
		YCbCr 4:4:4	Select this to output the video signals as YCbCr 4:4:4 signals.
		YCbCr 4:2:2	Select this to output the video signals as YCbCr 4:2:2 signals.
		RGB (16 to 235)	Select this to output the video signals as RGB signals. Choose this if the colors seem too dense and all the dark colors are displayed in a uniform black when **RGB (0 to 255)** is selected.
		RGB (0 to 255)	Select this to output the video signals as RGB signals. Choose this if the colors seem too faint and the black seems too bright when **RGB (16 to 235)** is selected.
	Normally it is recommended to set this to **Auto**. When set to **Auto**, the optimum video signals for your TV are output.		
	HDMI Audio Out * HDMI MAIN only.	**Auto**	The signals are output with as many audio channels as possible. In cases when the number of channels does not decrease when the signals are output as such without converting them to linear PCM, they are output as such (page 53).
		PCM	Select this when you want the secondary audio and interactive audio signals to be mixed for output or when you want to output prioritizing sampling frequency over the number of channels (page 53).
	PQLS * HDMI MAIN only.	**Auto**	Enables PQLS function (page 15).
		Off	Disables PQLS function (page 15).
	KURO LINK * HDMI MAIN only.	**On**	Select this to control the player with the remote control of the AV device connected using an HDMI cable. Also refer to *About KURO LINK function* on page 15.
		Off	Select this when you do not want to control the player with the remote control of the AV device connected using an HDMI cable.
Playback	Still Picture	Field	This eliminates instability of the picture when playback is paused.
		Frame	This makes pictures clear when playback is paused, but instability may be observed.
		Auto	**Field** or **Frame** is switched automatically according to the disc or file being played.
	Angle/Secondary Indicator	On	Select this to display the angle mark, secondary video mark and secondary audio mark on the TV screen (pages 28 and 29).
		Off	Select this if you do not want to display the angle mark, secondary video mark and secondary audio mark on the TV screen.
	DivX VOD	Registration Code	Displays the player's registration code required to play DivX VOD files (page 10).
	Hybrid Disc Playback	**BD**	The BD layer of hybrid discs with two or more layers (BD and DVD or CD) is played.
		DVD	The DVD layer of hybrid discs with two or more layers (BD and DVD) is played. If there is no DVD layer, the BD layer is played.
		CD	The CD layer of hybrid discs with two or more layers (BD and CD) is played. If there is no CD layer, the BD layer is played.
	Remove the disc from the disc tray when changing the setting.		
	BDMV/BDAV Playback Priority	BDMV	Select this to play the BDMV format on BD-R/-RE discs containing both BDMV and BDAV formats.
		BDAV	Select this to play the BDAV format on BD-R/-RE discs containing both BDMV and BDAV formats.
	Remove the disc from the disc tray when changing the setting.		

	Setting	Options	Explanation
Language	OSD Language	**English**	Select this to set the language of the on-screen displays to English.
		available languages	Choose a language for the on-screen displays from the listed languages.
	Audio Language * For some discs, it may not be possible to change to the selected language.	**English**	Select this to set both the BD-ROM and DVD-Video default audio language to English.
		available languages	Choose a language from the listed languages to set the default audio language for BD-ROM and DVD-Video playback.
		Other	Continue to the next screen to set the default audio language for BD-ROM and DVD-Video playback. You can select the language name or enter the code number (see on page 54 for the code table).
	If a language not recorded on the BD/DVD is set, one of the recorded languages is automatically selected and played.		
	Subtitle Language * For some discs, it may not be possible to change to the selected language.	**English**	Select this to set the default subtitle language for BD-ROM and DVD-Video playback to English.
		available languages	Choose a language from the listed languages to set the default subtitle language for BD-ROM and DVD-Video playback.
		Other	Continue to the next screen to set the default subtitle language for BD-ROM and DVD-Video playback. You can select the language name or enter the code number (see on page 54 for the code table).
	If a language not recorded on the BD/DVD is set, one of the recorded languages is automatically selected and played.		
	BDMV/DVD-Video Menu Lang. * For some discs, it may not be possible to change to the selected language.	**w/Subtitle Language**	Sets the language of BD-ROM and DVD-Video menus to the same as that set for the subtitle language.
		available languages	Choose a language from the listed languages to set the default language for BD-ROM and DVD-Video menus.
		Other	Continue to the next screen to set the default menu language for BD-ROM and DVD-Video menus. You can select the language name or enter the code number (see on page 54 for the code table).
	If a language not recorded on the BD/DVD is set, one of the recorded languages is automatically selected and played.		
	Subtitle Display	**On**	Select this to display the subtitles.
		Off	Select this if you do not want to display the subtitles. Note that on some discs the subtitles are displayed by force.
Parental Lock	Set Password (Change Password)	Register (change) the password for parental lock settings or for unlocking to play DVD-Video with parental lock feature (page 47).	
	DVD-Video Parental Lock	Change the player's parental lock level (page 48).	
	BDMV Parental Lock	Change the restricted age (page 48).	
	Country Code	Change the Country/Area code (page 49).	
Network	IP Address	Select this to set the IP address of the player and DNS server (page 49).	
	Proxy Server	Only set the proxy server if so instructed by your Internet service provider (page 49).	
	Display Network Configuration	Select this to display a list of the network settings (page 50).	
	Connection Test	Select this to test the network connection (page 50).	
Options	On Screen Display	**On**	Select this to display the operation indicators (Play, Stop, etc.) on the TV screen.
		Off	Select this if you do not want to display the operation indicators (Play, Stop, etc.) on the TV screen.
	Screen Saver	**On**	The screen saver is automatically activated if there is no operation for over 1 minute after playback is stopped or paused. The screen saver is automatically activated if there is no operation for over 1 minute after the Home Menu or Home Media Gallery is displayed while playing a BD or DVD. With audio CDs and audio files, the screen saver is automatically activated if no button is operated for over 1 minute, even while the audio CD or audio file is playing. The screen saver turns off when an operation is performed on the player or remote control.
		Off	The screen saver is not activated.
	Auto Power Off	**On**	Select this to turn the power off automatically (the power turns off automatically if no operation is performed for over 30 minutes).
		Off	Select this if you do not want the power to turn off automatically.
	BDMV Data Erase	When a BD-ROM is played, additional data may be stored in the player's memory (local storage). If the message indicating low memory (local storage) appears, erase the BDMV data (page 50).	
	Software Update	The Software Update function can check for and download updated system software from the network server (page 51).	
Setup Navigator		Start making the settings using the Setup Navigator menu. For details, see *Making settings using the Setup Navigator menu* on page 20.	

❖ Changing the speaker setup

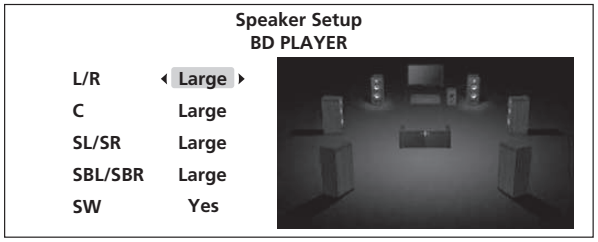
Set whether or not speakers are connected to the AV receiver or amplifier, as well as the size of the speakers. This setting is only valid for the **AUDIO OUT (7.1 ch)** terminals.

Caution

- The **Speaker Setup** cannot be selected when **Audio Output Mode** is set to **2 Channel**. Change the setting to **Multi-channel** (page 44).

1 Select and set Speakers → Speaker Setup → Next Screen.
Use ↑/↓ to select, then press **ENTER**.

2 Select the speaker and change the setting.
Use ↑/↓ to select, then use ←/→ to change the setting.



- **L/R** (front left and right speakers): **Large**/**Small**
- **C** (center speaker): **Large**/**Small**/**None**
- **SL/SR** (left and right surround speakers): **Large**/**Small**/**None**
- **SBL/SBR** (left and right surround back speakers): **Large**/**Small**/**None**
- **SW** (subwoofer): **Yes**/**No**

Note

- Depending on the combination of settings of the different speakers, the settings of speakers other than the one you have changed may also change automatically.

❖ Adjusting the distance of the different speakers

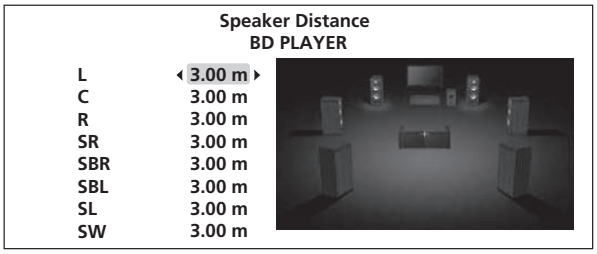
Adjust the distance between you and the different speakers. This setting is only valid for the **AUDIO OUT (7.1 ch)** terminals.

Caution

- This cannot be selected when **Audio Output Mode** is set to **2 Channel**. Change the setting to **Multi-channel** (page 44).
- **Speaker Distance** of the speakers set to **None** or **No** at **Speaker Setup** cannot be adjusted (above).

1 Select and set Speakers → Speaker Distance → Next Screen.
Use ↑/↓ to select, then press **ENTER**.

2 Select the speaker and adjust the distance.
Use ↑/↓ to select, then use ←/→ to adjust.



- The distance of all the speakers can be set to between 0.01 m and 9.00 m, in units of 0.01 m.

❖ Adjusting the output level of the different speakers (Channel Level)

Adjust each output level of the different speakers by using test tones. This setting is only valid for the **AUDIO OUT (7.1 ch)** terminals.

Caution

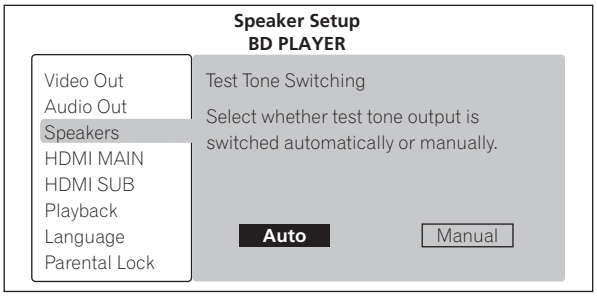
- This cannot be selected when **Audio Output Mode** is set to **2 Channel**. Change the setting to **Multi-channel** (page 44).
- **Channel Level** of the speakers set to **None** or **No** at **Speaker Setup** cannot be adjusted (above).
- Test tones are output. Lower the volume of the device connected to the player.

1 Select and set Speakers → Channel Level, then Fix or Variable.
Use ↑/↓ to select, then press **ENTER**.

- **Fix** – The output level of all the speakers is set to the maximum.
- **Variable** – The output level of all the speakers is set 6.0 dB lower than when **Fix** is selected. From this point, the output levels of the **L**, **C**, **R**, **SL**, **SR**, **SBL**, **SBR** and **SW** speakers can be adjusted within the range of –6.0 dB to +6.0 dB.

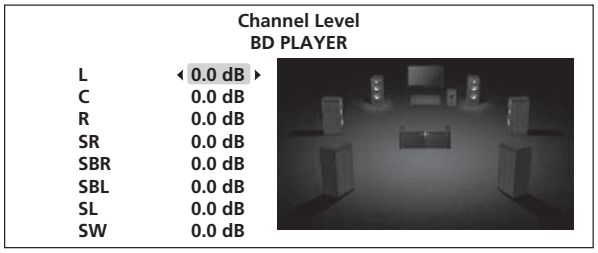
If you have selected **Variable**, proceed to step 2.

2 Select and set the method for switching the speaker to be adjusted.
Use ←/→ to select, then press **ENTER**.



- **Auto** – Switch the speaker to be adjusted automatically.
- **Manual** – Switch the speaker to be adjusted manually.

3 Adjust the output level.
Use ↑/↓ to select, ←/→ to adjust.



Note

- You can also adjust while listening to the sound being played (page 40).
- The volume of the test tones output from the subwoofer may seem lower than the tones output from the other channels. Adjust the subwoofer based on the sound during playback (page 40).
- When **Auto** is selected, the speaker cannot be selected with ↑/↓. In this case, test tones are not output from the subwoofer.

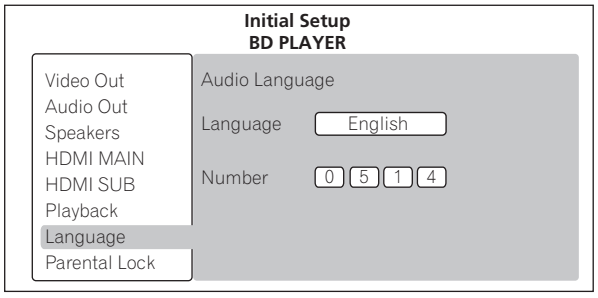
❖ Changing to other language at language setting

1 Select and set Language.
Use ↑/↓ to select, then press **ENTER**.

2 Select and set Audio Language, Subtitle Language or BDMV/DVD-Video Menu Lang.
Use ↑/↓ to select, then press **ENTER**.

3 Select and set Other.
Use ↑/↓ to select, then press **ENTER**.

4 Change the language.
Use ←/→ to change, then press **ENTER**.



- The language can also be changed using the number buttons. Use ↑/↓ to move the cursor to **Number**, use the number buttons (0 to 9) to input the number, then press **ENTER**. Refer to *Language Code Table and Country/Area Code Table* on page 54.

Note

- If a language not recorded on the BD/DVD is set, one of the recorded languages is automatically selected and played.

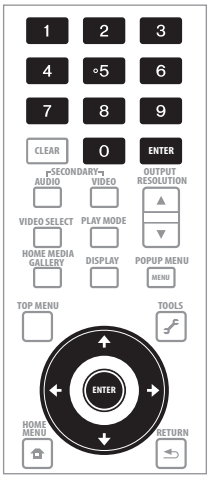
❖ Registering or Changing the password

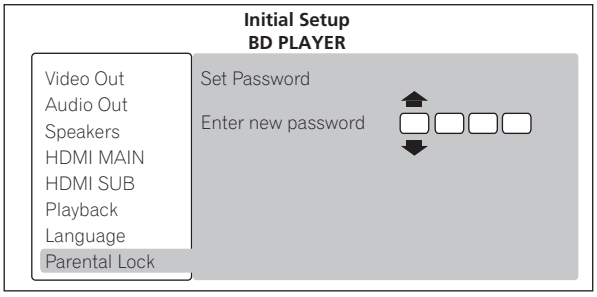
Use this procedure to register or change the code number required for the Parental Lock settings.

1 Select and set Parental Lock → Set Password → Next Screen.
Use ↑/↓ to select, then press **ENTER**.

2 Input the password.
Use the number buttons (0 to 9) or ↑/↓ to input the number, then press **ENTER** to set.

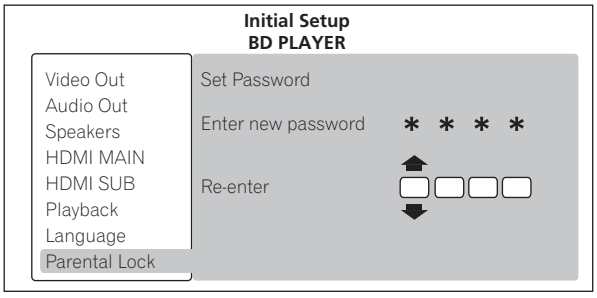
Use ←/→ to move the cursor.





3 Re-input the password.
Use the number buttons (0 to 9) or ↑/↓ to input the number, then press **ENTER** to set.

Use ←/→ to move the cursor.



- To change the password, input the previously registered password, then input the new password.

Note

- We recommend making a note of the password.
- If you forget the password, reset the player to the factory default setting, then register the password again (page 52).

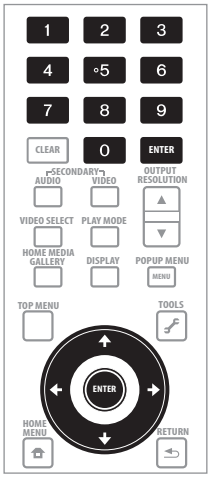
❖ Changing the Parental Lock level for viewing DVDs

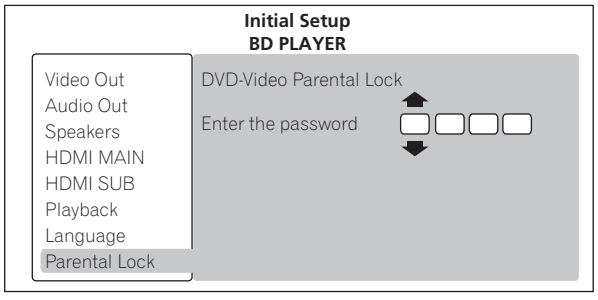
Some DVD-Video discs containing scenes of violence, for example, have Parental Lock levels (check the indications on the disc's jacket or elsewhere). To restrict viewing these discs, set the player's level to the level lower than the discs.

1 Select and set Parental Lock → DVD-Video Parental Lock → Next Screen.
Use ⬆/⬇ to select, then press **ENTER**.

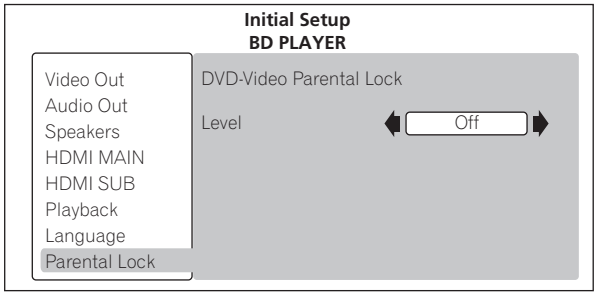
2 Input the password.
Use the number buttons (0 to 9) or ⬆/⬇ to input the number, then press **ENTER** to set.

Use ⬅/➡ to move the cursor.





3 Change the level.
Use ⬅/➡ to change, then press **ENTER** to set.



Note

- The level can be set to **Off** or between **Level1** and **Level8**. When set to **Off**, viewing is not restricted.

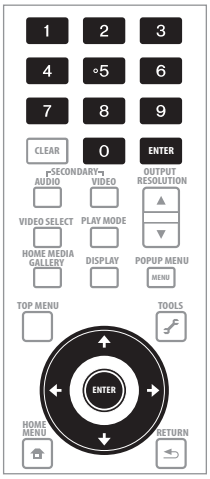
❖ Changing the Age Restriction for viewing BD-ROMs

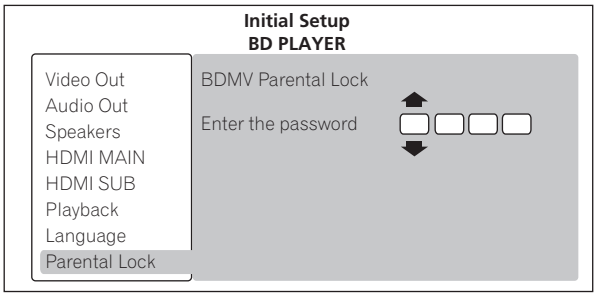
For BD-ROMs containing scenes of violence, for example, viewing can be restricted by setting an age restriction for the BD-ROMs.

1 Select and set Parental Lock → BDMV Parental Lock → Next Screen.
Use ⬆/⬇ to select, then press **ENTER**.

2 Input the password.
Use the number buttons (0 to 9) or ⬆/⬇ to input the number, then press **ENTER** to set.

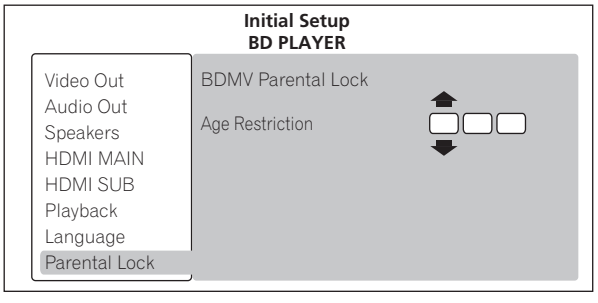
Use ⬅/➡ to move the cursor.





3 Change the age.
Use the number buttons (0 to 9) or ⬆/⬇ to input the number, then press **ENTER** to set.

Use ⬅/➡ to move the cursor.



Note

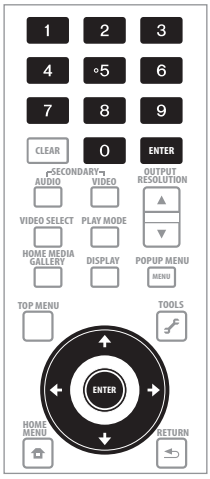
- When **Age Restriction** is set to **255**, viewing is not restricted.

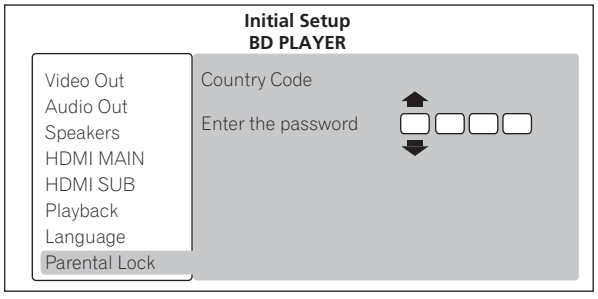
❖ Changing the Country/Area code

1 Select and set Parental Lock → Country Code → Next Screen.
Use ⬆/⬇ to select, then press **ENTER**.

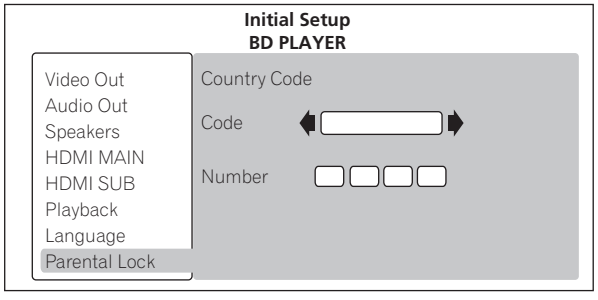
2 Input the password.
Use the number buttons (0 to 9) or ⬆/⬇ to input the number, then press **ENTER** to set.

Use ⬅/➡ to move the cursor.





3 Change the country/area code.
Use ⬅/➡ to change, then press **ENTER** to set.

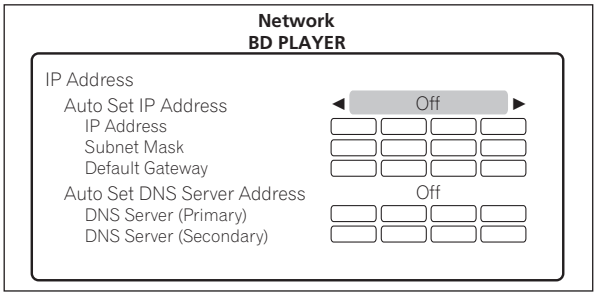


- The the country/area code can also be changed using the number buttons. Use ⬆/⬇ to move the cursor to **Number**, use the number buttons (0 to 9) to input the number, then press **ENTER**. Refer to *Language Code Table and Country/Area Code Table* on page 54.

❖ Setting the IP address

1 Select and set Network → IP Configuration → Next Screen.
Use ⬆/⬇ to select, then press **ENTER**.

2 Set IP address.
Use ⬆/⬇/⬅/➡ to set the IP address of the player or DNS server, then press **ENTER**.



- **Auto Set IP Address**

  On – The player's IP address is obtained automatically. Select this when using a broadband router or broadband modem that has a DHCP (Dynamic Host Configuration Protocol) server function. This player's IP address will automatically be allocated from the DHCP server.

  Off – The player's IP address must be set manually. Use the number buttons (0 to 9) to input the IP address, subnet mask and default gateway.

- **Auto Set DNS Server Address**

  On – The DNS server's IP address is obtained automatically.

  Off – The DNS server's IP address must be set manually. Use the number buttons (0 to 9) to input the DNS server's IP address stipulated by your Internet service provider.

Note

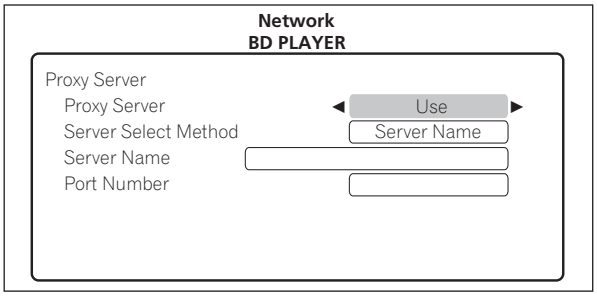
- When **Auto Set IP Address** is set to **Off**, **Auto Set DNS Server Address** is also set to **Off**.
- For information on DHCP server function, refer to the network device's operating instructions.
- You may need to contact your Internet service provider or network administrator when inputting the IP address manually.

❖ Setting the proxy server

Only set the proxy server if so instructed by your Internet service provider.

1 Select and set Network → Proxy Server → Next Screen.
Use ⬆/⬇ to select, then press **ENTER**.

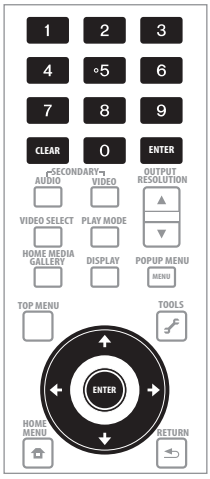
2 Select and set Use or Not use at Proxy Server.
Use ⬅/➡ to change, then press ⬇.



- **Use** – Select this when using a proxy server.
- **Not use** – Select this when not using a proxy server.

If you have selected **Use**, proceed to step 3.

3 Select and set Server Select Method.
Use ←/→ to change, then press ↓.



- **IP Address** – Input the IP address.
- **Server Name** – Input the server name.

4 Input IP Address or Server Name
Use the number buttons (0 to 9) to input the number if you select IP address by step 3. Use ←/→ to move the cursor.

Use the number buttons (0 to 9) to input characters if you select Server Name by step 3.

The characters that can be input for the server name are listed on the table below. Pressing a button repeatedly cycles through the characters shown.

- If you want to enter two characters in succession that are both on the same button (for example a **P** and an **R**), press ➡ after inputting the first character then input the second character.
- Use **CLEAR** to delete the last character.
- Use ←/→ to move the displayed characters when all the input characters cannot be displayed.

Key	Characters	Key	Characters
1	1 . –	6	m n o 6
2	a b c 2	7	p q r s 7
3	d e f 3	8	t u v 8
4	g h i 4	9	w x y z 9
5	j k l 5	0	0

5 Input Port Number.
Press ↓, use the number buttons (0 to 9) to input the number.

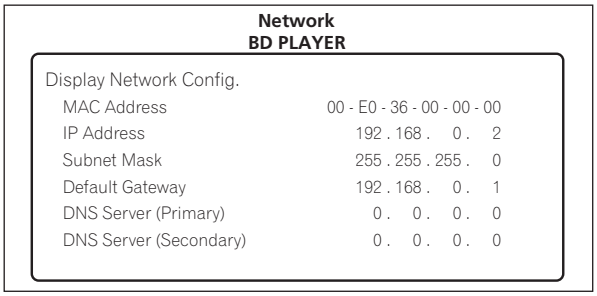
6 Press ENTER to set.

❖ Displaying the network settings

1 Select and set Network → Display Network Configuration → Next Screen.
Use ↑/↓ to select, then press **ENTER**.

The MAC address, IP address, subnet mask, default gateway and DNS server (primary and secondary) settings are displayed.

When **Auto Set IP Address** is set to **On**, the values obtained automatically are displayed.


Network
BD PLAYER
Display Network Config.
MAC Address 00 - E0 - 36 - 00 - 00 - 00
IP Address 192 . 168 . 0 . 2
Subnet Mask 255 . 255 . 255 . 0
Default Gateway 192 . 168 . 0 . 1
DNS Server (Primary) 0 . 0 . 0 . 0
DNS Server (Secondary) 0 . 0 . 0 . 0

Note

- "0.0.0.0" is displayed when each IP address has not been set.

❖ Testing the network connection

1 Select and set Network → Connection Test → Start.
Use ↑/↓ to select, then press **ENTER**.

"Network connection test completed successfully." is displayed once the test is completed. If any other message is displayed, check the connections and/or settings (pages 19 and 49).

❖ Erasing the additional data from BD-ROMs

When a BD-ROM is played, additional data may be stored in the player's memory (local storage).

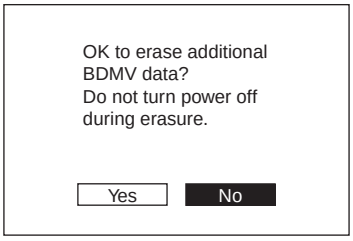
If the message indicating low memory (local storage) appears, erase the BDMV data.

Caution

- When the BDMV data is erased, all the data of secondary video (Picture-in-Picture), secondary audio, bookmark, etc. that has been stored is erased.
- It takes time to erase the BDMV data for a while. Do not unplug the power cord while the data is being erased.

1 Select and set Options → BDMV Data Erase → Next Screen.
Use ↑/↓ to select, then press **ENTER**.

2 Erase the data.
Use ←/→ to select **Yes**, then press **ENTER**.



❖ Software updating

The software of the player can be updated by connecting it to the Internet using a LAN cable.

Before updating the software, make sure that you have connected the player to the network and made the necessary settings (pages 19 and 49).

Caution

- Do not unplug the power cord during software updating. Otherwise, the updating will be aborted and malfunction may occur with the player.
- There are two processes for software updating, downloading and updating. Both processes may take a certain period of time.
- Depending on the Internet connection conditions, downloading may take a long time.
- Other operations are defeated during software updating. Furthermore updating process cannot be canceled.
- When the front panel display is off, turn it on with **FL DIMMER**. When updating the player's software with the front panel display off, do not unplug the power cord until the **FL OFF** indicator turns off.

Note

- Steps **1** to **2** are the operations performed by the user (they are intended to download the software from the Internet).
- Steps **3** to **5** are the operations performed (automatically) by the player (they are intended to update the software).

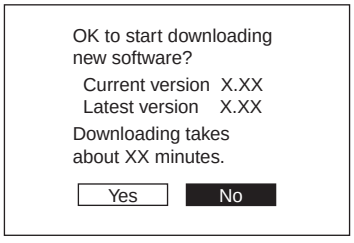
1 Select and set Options → Software Update → Start.

Use ↑/↓/←/→ to select, then press **ENTER**.

- If the player is already running the latest software, the message "The player's software is up to date and does not need updating." is displayed.

2 Select and set Yes.

Use ←/→ to select **Yes**, then press **ENTER**.



- The help menu is displayed if the player cannot connect to the Internet. Check the connections and settings (pages 19 and 49).

3 Downloading of the software start.

The software download status is displayed on the screen.

- Depending on the Internet connection conditions, software downloading may take a certain period of time.

4 Updating starts.

The front panel display shows messages such as **"DATA CHECK"**, **"WRT SYS1"**, **"WRT DRV"** and **"WRT FLC"**.

- Software updating may take a certain period of time.

5 Updating completes.

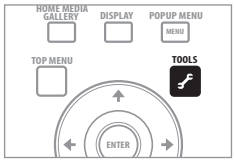
The front panel display shows **"DOWNLOAD OK"** and the player turns off automatically.

Stretching widescreen pictures vertically (Anamorphic Zoom)

Some discs include movies, etc., with a vertical-to-horizontal picture rate of 2.35:1 recorded as 16:9 pictures with black bars at the top and bottom of the screen. Turn this function on when projecting this type of picture with a front projector equipped with an anamorphic lens.

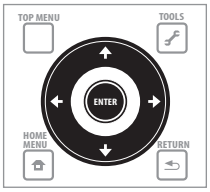
1 During playback, display the TOOLS menu.

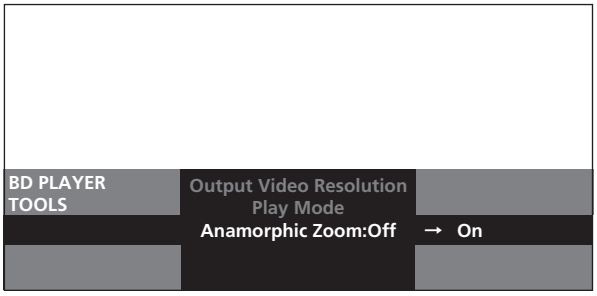
Press **TOOLS**.



2 Select and set Anamorphic Zoom.

Use ↑/↓ to select, then use ←/→ to change the setting.





- **On** – 16:9 pictures are stretched vertically, cropping the black bars at the top and bottom of the 2.35:1 picture for output.
- **Off** – 16:9 pictures are output as such, without stretching them vertically.

Note

- This is valid when **TV Aspect Ratio** is set to **16:9 (Widescreen)** (page 43).
- When set to **On**, the top and bottom of 16:9 pictures with no black bars at the top and bottom are also cropped.
- Even when set to **On**, the vertical stretch is canceled and the original picture with the black bars reappears temporarily when the Video Adjust screen is displayed. For other operation screens, the top and bottom may be cropped, making the screen hard to see.

❖ To close the TOOLS menu

Press **TOOLS** or **RETURN**.

Eliminating extraneous noise to play with high quality sound (Pure Audio)

This function suppresses unnecessary signals to reduce noise and output high quality audio signals.

The Pure Audio function includes the following modes:

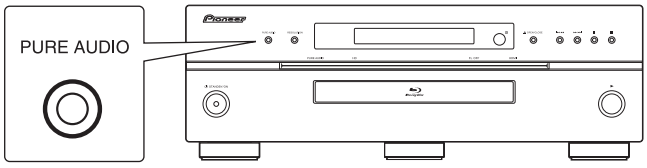
- **Mode 1** – Select this when listening to audio CDs and audio files. This mode also provides higher quality sound than **Mode 2** when playing only the audio portion of such video sources as BDs, DVDs and video files.
- **Mode 2** – Select this when also viewing the video portion of such video sources as BDs, DVDs and video files.
- **Off** – Select this to disable the Pure Audio function.

Caution

- When **Mode 1** or **Mode 2** is set, the operation is as described below.
  - When **Mode 1** is set, only audio signals are output during playback (except when an operation is being performed and the disc menus are being displayed).
  - Video signals are only output from the output terminal selected with **VIDEO SELECT** (page 24).
  - Audio signals are only output from the output terminal set at **Output Terminal** (page 43).
  - The player's front panel display turns off during playback (except when an operation is being performed and the disc menus are being displayed).
  - The **PURE AUDIO** indicator on the player's front panel lights.

❖ Switching the Pure Audio Mode

▶ **Press PURE AUDIO on the front panel.**



The currently set Pure Audio mode is indicated on the player's front panel display.

The Pure Audio mode changes each time the button is pressed.

"PURE MODE1" → "PURE MODE2" → "PURE OFF"

Note

- The Pure Audio mode cannot be changed during playback.

Restoring all the settings to the factory default settings

1 Check that the player's power is turned on.

2 When a disc is playing, press ■ to stop playback.
Eject the disc from the player.

3 While pressing ■, press ⏻ STANDBY/ON.
Operate using the buttons on the player's front panel.

Note

- After restoring all the settings to the factory default settings, use **Setup Navigator** to reset the player (page 20).
- When all the settings are restored to the factory defaults, all the data for the secondary video (Picture-in-Picture), secondary audio, bookmarks, etc., is erased.

About the audio output settings

The audio signals that are output differ according to the audio format recorded on the disc and the player's settings. Check on the table below.

Caution

- When **ANALOG AUDIO** is selected at **Output Terminal**, no audio signals are output from the **HDMI OUT** or **DIGITAL OUT** terminals (page 43).
- When **HDMI MAIN** or **DIGITAL AUDIO** is selected at **Output Terminal**, linear PCM audio signals (2 channels) are output from all terminals other than the ones selected at **Output Terminal** (page 43).
- The **HDMI OUT (SUB)** terminal outputs linear PCM 2-channel audio signals.

Audio format		AUDIO OUT (7.1 ch) terminals		DIGITAL OUT terminals		HDMI OUT (MAIN) terminal	
		2ch[1]	Multi-channel[1]	Converted to linear PCM audio[2]	Not converted to linear PCM audio[3]	PCM[4]	Auto[4]
BD-ROM	Dolby Digital	Converted to 2-channel audio	5.1-channel audio	Converted to 2-channel audio	Dolby Digital[5]	5.1-channel audio	Dolby Digital[6,7]
	Dolby Digital Plus		7.1-channel audio			7.1-channel audio	Dolby Digital Plus[6,7]
	Dolby TrueHD					7.1-channel audio[8]	Dolby TrueHD[6,7,9]
	DTS Digital Surround		5.1-channel audio		DTS Digital Surround[5]	5.1-channel audio	DTS Digital Surround[6,10]
	DTS-HD High Resolution Audio		5.1-channel audio[11]			5.1-channel audio[11]	DTS-HD High Resolution Audio[6,8,10]
	DTS-HD Master Audio						DTS-HD Master Audio[6,10,12]
	Linear PCM		7.1-channel audio		Converted to 2-channel audio	7.1-channel audio[8]	7.1-channel audio[8]
BD-R/ -RE	Dolby Digital	Converted to 2-channel audio	5.1-channel audio	Converted to 2-channel audio	Dolby Digital	5.1-channel audio	Dolby Digital[7]
	MPEG-2 AAC				MPEG-2 AAC		MPEG-2 AAC
	MPEG	2-channel audio					
	Linear PCM						
DVD-Video	Dolby Digital	Converted to 2-channel audio	5.1-channel audio	Converted to 2-channel audio	Dolby Digital	5.1-channel audio	Dolby Digital[7]
	DTS Digital Surround				DTS Digital Surround		DTS Digital Surround[10]
	MPEG	2-channel audio					
	Linear PCM						
DVD (VR format)	Dolby Digital	Converted to 2-channel audio	5.1-channel audio	Converted to 2-channel audio	Dolby Digital	5.1-channel audio	Dolby Digital[7]
	MPEG	2-channel audio					
	Linear PCM						

1. When **Audio Output Mode** is set to **2 Channel** or **Multi-channel** (page 44).
2. When **Dolby Digital Out** is set to **Dolby Digital → PCM**, **DTS Out** is set to **DTS → PCM**, or **AAC Out** is set to **AAC → PCM** (page 43).
3. When **Dolby Digital Out** is set to **Dolby Digital 1**/**Dolby Digital 2**, **DTS Out** is set to **DTS 1**/**DTS 2** or **AAC Out** is set to **AAC** (page 43).
4. When **HDMI Audio Out** is set to **PCM** or **Auto** (page 44).
5. When outputting Dolby Digital or DTS Digital Surround bitstream with settings of **Dolby Digital 2** at **Dolby Digital Out**, **DTS 2** at **DTS Out**, the secondary audio and interactive audio signals are not mixed for output.
6. When outputting the bitstream of Dolby TrueHD, Dolby Digital Plus, Dolby Digital, DTS-HD Master Audio, DTS-HD High Resolution Audio or DTS Digital Surround, the secondary audio and interactive audio signals are not mixed.
7. If the connected HDMI device is not compatible with Dolby TrueHD or Dolby Digital Plus bitstream, the signals are output in linear PCM (7.1 channels) or Dolby Digital bitstream.
   If the connected HDMI device is not compatible with Dolby Digital bitstream, the signals are output in linear PCM (2 channels).
8. When the output video resolution is set to 576i/480i or 576p/480p, the signals may be output in linear PCM (2 channels), depending on **HDMI High Speed Transmission** setting and/or the connected HDMI device (page 14).
9. When the output video resolution is set to 576i/480i or 576p/480p, the signals may be output in linear PCM (2 channels) or Dolby Digital bitstream, depending on **HDMI High Speed Transmission** setting and/or the connected HDMI device (page 14).
10. If the connected HDMI device is not compatible with DTS-HD Master Audio or DTS-HD High Resolution Audio, the signals are output in DTS Digital Surround bitstream.
    If the connected HDMI device is not compatible with DTS Digital Surround bitstream, the signals are output in linear PCM (2 channels).
11. DTS Digital Surround signals converted to linear PCM audio signals are output.
12. When the output video resolution is set to 576i/480i or 576p/480p, the signals may be output in linear PCM (2 channels) or DTS Digital Surround bitstream, depending on **HDMI High Speed Transmission** setting and/or the connected HDMI device (page 14).

Note

- Only compatible with 7.1-channel surround back. 6.1-channel surround back is output in 7.1 channels. In other cases, output as audio signals of 5.1-channels or less.
- When outputting linear PCM audio signals, if the number of compatible channels of the connected HDMI device is lower, the signals are output with the number of channels for which the device is compatible.
- The audio signals output from the **HDMI OUT (SUB)** and **DIGITAL OUT** terminals have a sampling frequency of 48 kHz (44.1 kHz for audio CDs).

Language Code Table and Country/Area Code Table

❖ Language Code Table

Language name, **language code, input code**

Abkhazian, **ab/abk, 0102**
Afar, **aa/aar, 0101**
Afrikaans, **af/afr, 0106**
Albanian, **sq/sqi, 1917**
Amharic, **am/amh, 0113**
Arabic, **ar/ara, 0118**
Armenian, **hy/hye, 0825**
Assamese, **as/asm, 0119**
Aymara, **ay/aym, 0125**
Azerbaijani, **az/aze, 0126**
Bashkir, **ba/bak, 0201**
Basque, **eu/eus, 0521**
Belarusian, **be/bel, 0205**
Bengali, **bn/ben, 0214**
Bihari, **bh/bih, 0208**
Bislama, **bi/bis, 0209**
Breton, **br/bre, 0218**
Bulgarian, **bg/bul, 0207**
Burmese, **my/mya, 1325**
Catalan, **ca/cat, 0301**
Chinese, **zh/zho, 2608**
Corsican, **co/cos, 0315**
Croatian, **hr/hrv, 0818**
Czech, **cs/ces, 0319**
Danish, **da/dan, 0401**
Dutch, **nl/nld, 1412**
Dzongkha, **dz/dzo, 0426**
English, **en/eng, 0514**
Esperanto, **eo/epo, 0515**
Estonian, **et/est, 0520**
Finnish, **fi/fin, 0609**
Fijian, **fj/fij, 0610**
Faroese, **fo/fao, 0615**
French, **fr/fra, 0618**
Frisian, **fy/fry, 0625**
Galician, **gl/glg, 0712**
Georgian, **ka/kat, 1101**
German, **de/deu, 0405**
Greek, **el/ell, 0512**
Guarani, **gn/grn, 0714**
Gujarati, **gu/guj, 0721**
Hausa, **ha/hau, 0801**
Hebrew, **iw/heb, 0923**
Hindi, **hi/hin, 0809**
Hungarian, **hu/hun, 0821**
Icelandic, **is/isl, 0919**
Indonesian, **in/ind, 0914**
Interlingua, **ia/ina, 0901**
Interlingue, **ie/ile, 0905**
Inupiaq, **ik/ipk, 0911**
Irish, **ga/gle, 0701**
Italian, **it/ita, 0920**
Japanese, **ja/jpn, 1001**
Javanese, **jw/jav, 1023**
Kalaallisut, **kl/kal, 1112**
Kannada, **kn/kan, 1114**
Kashmiri, **ks/kas, 1119**
Kazakh, **kk/kaz, 1111**
Khmer, **km/khm, 1113**
Kinyarwanda, **rw/kin, 1823**
Kirghiz, **ky/kir, 1125**
Korean, **ko/kor, 1115**
Kurdish, **ku/kur, 1121**
Lao, **lo/lao, 1215**
Latin, **la/lat, 1201**
Latvian, **lv/lav, 1222**
Lingala, **ln/lin, 1214**
Lithuanian, **lt/lit, 1220**
Macedonian, **mk/mkd, 1311**
Malagasy, **mg/mlg, 1307**
Malay, **ms/msa, 1319**
Malayalam, **ml/mal, 1312**
Maltese, **mt/mlt, 1320**
Maori, **mi/mri, 1309**
Marathi, **mr/mar, 1318**
Mongolian, **mn/mon, 1314**
Moldavian, **mo/mol, 1315**
Nauru, **na/nau, 1401**
Nepali, **ne/nep, 1405**
Norwegian, **no/nor, 1415**
Occitan, **oc/oci, 1503**
Oriya, **or/ori, 1518**
Oromo, **om/orm, 1513**
Panjabi, **pa/pan, 1601**
Persian, **fa/fas, 0601**
Polish, **pl/pol, 1612**
Portuguese, **pt/por, 1620**
Pushto, **ps/pus, 1619**
Quechua, **qu/que, 1721**
Rhaeto-Romance, **rm/roh, 1813**
Rundi, **rn/run, 1814**
Russian, **ru/rus, 1821**
Romanian, **ro/ron, 1815**
Samoan, **sm/smo, 1913**
Sango, **sg/sag, 1907**
Sanskrit, **sa/san, 1901**
Scots-Gaelic, **gd/gla, 0704**
Serbian, **sr/srp, 1918**
Serbo-Croatian, **sh/scr, 1908**
Shona, **sn/sna, 1914**
Sindhi, **sd/snd, 1904**
Sinhalese, **si/sin, 1909**
Slovak, **sk/slk, 1911**
Slovenian, **sl/slv, 1912**
Somali, **so/som, 1915**
Sotho, Southern, **st/sot, 1920**
Spanish, **es/spa, 0519**
Sundanese, **su/sun, 1921**
Swahili, **sw/swa, 1923**
Swati, **ss/ssw, 1919**
Swedish, **sv/swe, 1922**
Tagalog, **tl/tgl, 2012**
Tajik, **tg/tgk, 2007**
Tamil, **ta/tam, 2001**
Tatar, **tt/tat, 2020**
Telugu, **te/tel, 2005**
Thai, **th/tha, 2008**
Tibetan, **bo/bod, 0215**
Tigrinya, **ti/tir, 2009**
Tonga (Tonga Islands), **to/ton, 2015**
Tsonga, **ts/tso, 2019**
Tswana, **tn/tsn, 2014**
Turkmen, **tk/tuk, 2011**
Turkish, **tr/tur, 2018**
Twi, **tw/twi, 2023**
Ukrainian, **uk/ukr, 2111**
Urdu, **ur/urd, 2118**
Uzbek, **uz/uzb, 2126**
Vietnamese, **vi/vie, 2209**
Volapük, **vo/vol, 2215**
Welsh, **cy/cym, 0325**
Wolof, **wo/wol, 2315**
Xhosa, **xh/xho, 2408**
Yiddish, **ji/yid, 1009**
Yoruba, **yo/yor, 2515**
Zulu, **zu/zul, 2621**

❖ Country/Area Code Table

Country/Area name, **Country/Area code, input code**

Anguilla, **ai, 0109**
Antigua and Barbuda, **ag, 0107**
Argentina, **ar, 0118**
Armenia, **am, 0113**
Australia, **au, 0121**
Austria, **at, 0120**
Azerbaijan, **az, 0126**
Bahamas, **bs, 0219**
Barbados, **bb, 0202**
Belarus, **by, 0225**
Belgium, **be, 0205**
Belize, **bz, 0226**
Bermuda, **bm, 0213**
Brazil, **br, 0218**
Bulgaria, **bg, 0207**
Canada, **ca, 0301**
Cayman Islands, **ky, 1125**
Chile, **cl, 0312**
China, **cn, 0314**
Colombia, **co, 0315**
Croatia, **hr, 0818**
Cyprus, **cy, 0325**
Czech Republic, **cz, 0326**
Denmark, **dk, 0411**
Dominica, **dm, 0413**
Dominican Republic, **do, 0415**
Estonia, **ee, 0505**
Finland, **fi, 0609**
France, **fr, 0618**
Georgia, **ge, 0705**
Germany, **de, 0405**
Greece, **gr, 0718**
Greenland, **gl, 0712**
Grenada, **gd, 0704**
Guyana, **gy, 0725**
Haiti, **ht, 0820**
Hong Kong, **hk, 0811**
Hungary, **hu, 0821**
Iceland, **is, 0919**
India, **in, 0914**
Indonesia, **id, 0904**
Ireland, **ie, 0905**
Israel, **il, 0912**
Italy, **it, 0920**
Jamaica, **jm, 1013**
Japan, **jp, 1016**
Kazakhstan, **kz, 1126**
Korea, Republic of, **kr, 1118**
Kyrgyzstan, **kg, 1107**
Latvia, **lv, 1222**
Liechtenstein, **li, 1209**
Lithuania, **lt, 1220**
Luxembourg, **lu, 1221**
Macedonia, the Former Yugoslav Republic of, **mk, 1311**
Malaysia, **my, 1325**
Malta, **mt, 1320**
Mexico, **mx, 1324**
Moldova, Republic of, **md, 1304**
Monaco, **mc, 1303**
Montserrat, **ms, 1319**
Netherlands, **nl, 1412**
New Zealand, **nz, 1426**
Norway, **no, 1415**
Pakistan, **pk, 1611**
Peru, **pe, 1605**
Philippines, **ph, 1608**
Poland, **pl, 1612**
Portugal, **pt, 1620**
Puerto Rico, **pr, 1618**
Romania, **ro, 1815**
Russian Federation, **ru, 1821**
Saint Kitts and Nevis, **kn, 1114**
Saint Lucia, **lc, 1203**
Saint Vincent and the Grenadines, **vc, 2203**
San Marino, **sm, 1913**
Singapore, **sg, 1907**
Slovakia, **sk, 1911**
Slovenia, **si, 1909**
Spain, **es, 0519**
Suriname, **sr, 1918**
Sweden, **se, 1905**
Switzerland, **ch, 0308**
Taiwan, Province of China, **tw, 2023**
Tajikistan, **tj, 2010**
Thailand, **th, 2008**
Trinidad and Tobago, **tt, 2020**
Tunisia, **tn, 2014**
Turkey, **tr, 2018**
Turkmenistan, **tm, 2013**
Turks and Caicos Islands, **tc, 2003**
Ukraine, **ua, 2101**
United Kingdom, **gb, 0702**
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Chapter 7
Additional information

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> Glenn Randers-Pehrson
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❖ libjpg

The Independent JPEG Group's JPEG software
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This software is the work of Tom Lane, Philip Gladstone, Jim Boucher, Lee Crocker, Julian Minguillon, Luis Ortiz, George Phillips, Davide Rossi, Guido Vollbeding, Ge' Weijers, and other members of the Independent JPEG Group.
IJG is not affiliated with the official ISO JPEG standards committee.
DOCUMENTATION ROADMAP
This file contains the following sections:

OVERVIEW	General description of JPEG and the IJG software.
LEGAL ISSUES	Copyright, lack of warranty, terms of distribution.
REFERENCES	Where to learn more about JPEG.
ARCHIVE LOCATIONS	Where to find newer versions of this software.
RELATED SOFTWARE	Other stuff you should get.
FILE FORMAT WARS	Software *not* to get.
TO DO	Plans for future IJG releases.

Other documentation files in the distribution are:
User documentation:

install.doc	How to configure and install the IJG software.
usage.doc	Usage instructions for cjpeg, djpeg, jpegtran, rdjpgcom, and wrjpgcom.
*.1	Unix-style man pages for programs (same info as usage.doc).
wizard.doc	Advanced usage instructions for JPEG wizards only.
change.log	Version-to-version change highlights.

Programmer and internal documentation:

libjpeg.doc	How to use the JPEG library in your own programs.
example.c	Sample code for calling the JPEG library.
structure.doc	Overview of the JPEG library's internal structure.
filelist.doc	Road map of IJG files.
coderules.doc	Coding style rules --- please read if you contribute code.

Please read at least the files install.doc and usage.doc. Useful information can also be found in the JPEG FAQ (Frequently Asked Questions) article. See ARCHIVE LOCATIONS below to find out where to obtain the FAQ article.
If you want to understand how the JPEG code works, we suggest reading one or more of the REFERENCES, then looking at the documentation files (in roughly the order listed) before diving into the code.
OVERVIEW
This package contains C software to implement JPEG image compression and decompression. JPEG (pronounced "jay-peg") is a standardized compression method for full-color and gray-scale images. JPEG is intended for compressing real-world scenes; line drawings, cartoons and other non-realistic images are not its strong suit. JPEG is lossy, meaning that the output image is not exactly identical to the input image. Hence you must not use JPEG if you have to have identical output bits. However, on typical photographic images, very good compression levels can be obtained with no visible change, and remarkably high compression levels are possible if you can tolerate a low-quality image. For more details, see the references, or just experiment with various compression settings.
This software implements JPEG baseline, extended-sequential, and progressive compression processes. Provision is made for supporting all variants of these processes, although some uncommon parameter settings aren't implemented yet. For legal reasons, we are not distributing code for the arithmetic-coding variants of JPEG; see LEGAL ISSUES. We have made no provision for supporting the hierarchical or lossless processes defined in the standard.
We provide a set of library routines for reading and writing JPEG image files, plus two sample applications "cjpeg" and "djpeg", which use the library to perform conversion between JPEG and some other popular image file formats. The library is intended to be reused in other applications.
In order to support file conversion and viewing software, we have included considerable functionality beyond the bare JPEG coding/decoding capability; for example, the color quantization modules are not strictly part of JPEG decoding, but they are essential for output to colormapped file formats or colormapped displays. These extra functions can be compiled out of the library if not required for a particular application. We have also included jpegtran, a utility for lossless transcoding between different JPEG processes, and "rdjpgcom" and "wrjpgcom", two simple applications for inserting and extracting textual comments in JFIF files.
The emphasis in designing this software has been on achieving portability and flexibility, while also making it fast enough to be useful. In particular, the software is not intended to be read as a tutorial on JPEG. (See the REFERENCES section for introductory material.) Rather, it is intended to be reliable, portable, industrial-strength code. We do not claim to have achieved that goal in every aspect of the software, but we strive for it.
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It appears that the arithmetic coding option of the JPEG spec is covered by patents owned by IBM, AT&T, and Mitsubishi. Hence arithmetic coding cannot legally be used without obtaining one or more licenses. For this reason, support for arithmetic coding has been removed from the free JPEG software. (Since arithmetic coding provides only a marginal gain over the unpatented Huffman mode, it is unlikely that very many implementations will support it.) So far as we are aware, there are no patent restrictions on the remaining code.
The IJG distribution formerly included code to read and write GIF files. To avoid entanglement with the Unisys LZW patent, GIF reading support has been removed altogether, and the GIF writer has been simplified to produce uncompressed GIFs. This technique does not use the LZW algorithm; the resulting GIF files are larger than usual, but are readable by all standard GIF decoders.
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REFERENCES
We highly recommend reading one or more of these references before trying to understand the innards of the JPEG software.
The best short technical introduction to the JPEG compression algorithm is
Wallace, Gregory K. "The JPEG Still Picture Compression Standard", Communications of the ACM, April 1991 (vol. 34 no. 4), pp. 30-44.
(Adjacent articles in that issue discuss MPEG motion picture compression, applications of JPEG, and related topics.) If you don't have the CACM issue handy, a PostScript file containing a revised version of Wallace's article is available at ftp://ftp.uu.net/graphics/jpeg/wallace.ps.gz. The file (actually a preprint for an article that appeared in IEEE Trans. Consumer Electronics) omits the sample images that appeared in CACM, but it includes corrections and some added material. Note: the

Wallace article is copyright ACM and IEEE, and it may not be used for commercial purposes.
A somewhat less technical, more leisurely introduction to JPEG can be found in The Data Compression Book by Mark Nelson and Jean-loup Gailly, published by M&T Books (New York), 2nd ed. 1996, ISBN 1-55851-434-1. This book provides good explanations and example C code for a multitude of compression methods including JPEG. It is an excellent source if you are comfortable reading C code but don't know much about data compression in general. The book's JPEG sample code is far from industrial-strength, but when you are ready to look at a full implementation, you've got one here...
The best full description of JPEG is the textbook "JPEG Still Image Data Compression Standard" by William B. Pennebaker and Joan L. Mitchell, published by Van Nostrand Reinhold, 1993, ISBN 0-442-01272-1. Price US$59.95, 638 pp. The book includes the complete text of the ISO JPEG standards (DIS 10918-1 and draft DIS 10918-2). This is by far the most complete exposition of JPEG in existence, and we highly recommend it.
The JPEG standard itself is not available electronically; you must order a paper copy through ISO or ITU. (Unless you feel a need to own a certified official copy, we recommend buying the Pennebaker and Mitchell book instead; it's much cheaper and includes a great deal of useful explanatory material.) In the USA, copies of the standard may be ordered from ANSI Sales at (212) 642-4900, or from Global Engineering Documents at (800) 854-7179. (ANSI doesn't take credit card orders, but Global does.) It's not cheap: as of 1992, ANSI was charging $95 for Part 1 and $47 for Part 2, plus 7% shipping/handling. The standard is divided into two parts, Part 1 being the actual specification, while Part 2 covers compliance testing methods. Part 1 is titled "Digital Compression and Coding of Continuous-tone Still Images, Part 1: Requirements and guidelines" and has document numbers ISO/IEC IS 10918-1, ITU-T T.81. Part 2 is titled "Digital Compression and Coding of Continuous-tone Still Images, Part 2: Compliance testing" and has document numbers ISO/IEC IS 10918-2, ITU-T T.83.
Some extensions to the original JPEG standard are defined in JPEG Part 3, a newer ISO standard numbered ISO/IEC IS 10918-3 and ITU-T T.84. IJG currently does not support any Part 3 extensions.
The JPEG standard does not specify all details of an interchangeable file format. For the omitted details we follow the "JFIF" conventions, revision 1.02. A copy of the JFIF spec is available from:

Literature Department
C-Cube Microsystems, Inc.
1778 McCarthy Blvd.
Milpitas, CA 95035
phone (408) 944-6300, fax (408) 944-6314

A PostScript version of this document is available by FTP at ftp://ftp.uu.net/graphics/jpeg/jfif.ps.gz. There is also a plain text version at ftp://ftp.uu.net/graphics/jpeg/jfif.txt.gz, but it is missing the figures.
The TIFF 6.0 file format specification can be obtained by FTP from ftp://ftp.sgi.com/graphics/tiff/TIFF6.ps.gz. The JPEG incorporation scheme found in the TIFF 6.0 spec of 3-June-92 has a number of serious problems. IJG does not recommend use of the TIFF 6.0 design (TIFF Compression tag 6). Instead, we recommend the JPEG design proposed by TIFF Technical Note #2 (Compression tag 7). Copies of this Note can be obtained from ftp.sgi.com or from ftp://ftp.uu.net/graphics/jpeg/. It is expected that the next revision of the TIFF spec will replace the 6.0 JPEG design with the Note's design. Although IJG's own code does not support TIFF/JPEG, the free libtiff library uses our library to implement TIFF/JPEG per the Note. libtiff is available from ftp://ftp.sgi.com/graphics/tiff/.
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The JPEG FAQ (Frequently Asked Questions) article is a useful source of general information about JPEG. It is updated constantly and therefore is not included in this distribution. The FAQ is posted every two weeks to Usenet newsgroups comp.graphics.misc, news.answers, and other groups. It is available on the World Wide Web at http://www.faqs.org/faqs/jpeg-faq/ and other news.answers archive sites, including the official news.answers archive at rtfm.mit.edu: ftp://rtfm.mit.edu/pub/usenet/news.answers/jpeg-faq/. If you don't have Web or FTP access, send e-mail to mail-server@rtfm.mit.edu with body

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RELATED SOFTWARE
Numerous viewing and image manipulation programs now support JPEG. (Quite a few of them use this library to do so.) The JPEG FAQ described above lists some of the more popular free and shareware viewers, and tells where to obtain them on Internet.
If you are on a Unix machine, we highly recommend Jef Poskanzer's free PBMPLUS software, which provides many useful operations on PPM-format image files. In particular, it can convert PPM images to and from a wide range of other formats, thus making cjpeg/djpeg considerably more useful. The latest version is distributed by the NetPBM group, and is available from numerous sites, notably ftp://wuarchive.wustl.edu/graphics/graphics/packages/NetPBM/. Unfortunately PBMPLUS/NETPBM is not nearly as portable as the IJG software is; you are likely to have difficulty making it work on any non-Unix machine.
A different free JPEG implementation, written by the PVRG group at Stanford, is available from ftp://havefun.stanford.edu/pub/jpeg/. This program is designed for research and experimentation rather than production use; it is slower, harder to use, and less portable than the IJG code, but it is easier to read and modify. Also, the PVRG code supports lossless JPEG, which we do not. (On the other hand, it doesn't do progressive JPEG.)
FILE FORMAT WARS
Some JPEG programs produce files that are not compatible with our library. The root of the problem is that the ISO JPEG committee failed to specify a concrete file format. Some vendors "filled in the blanks" on their own, creating proprietary formats that no one else could read. (For example, none of the early commercial JPEG implementations for the Macintosh were able to exchange compressed files.)
The file format we have adopted is called JFIF (see REFERENCES). This format has been agreed to by a number of major commercial JPEG vendors, and it has become the de facto standard. JFIF is a minimal or "low end" representation. We recommend the use of TIFF/JPEG (TIFF revision 6.0 as modified by TIFF Technical Note #2) for "high end" applications that need to record a lot of additional data about an image. TIFF/JPEG is fairly new and not yet widely supported, unfortunately.
The upcoming JPEG Part 3 standard defines a file format called SPIFF. SPIFF is interoperable with JFIF, in the sense that most JFIF decoders should be able to read the most common variant of SPIFF. SPIFF has some technical advantages over JFIF, but its major claim to fame is simply that it is an official standard rather than an informal one. At this point it is unclear whether SPIFF will supersede JFIF or whether JFIF will remain the de-facto standard. IJG intends to support SPIFF once the standard is frozen, but we have not decided whether it should become our default output format or not. (In any case, our decoder will remain capable of reading JFIF indefinitely.)
Various proprietary file formats incorporating JPEG compression also exist. We have little or no sympathy for the existence of these formats. Indeed, one of the original reasons for developing this free software was to help force convergence on common, open format standards for JPEG files. Don't use a proprietary file format!
TO DO
The major thrust for v7 will probably be improvement of visual quality. The current method for scaling the quantization tables is known not to be very good at low Q values. We also intend to investigate block boundary smoothing, "poor man's variable quantization", and other means of improving quality-vs-file-size performance without sacrificing compatibility.
In future versions, we are considering supporting some of the upcoming JPEG Part 3 extensions --- principally, variable quantization and the SPIFF file format.
As always, speeding things up is of great interest.
Please send bug reports, offers of help, etc. to jpeg-info@uunet.uu.net.

❖ libupnp

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Cautions on use

Moving the player

If you need to move this unit, first remove the disc if there’s one loaded, and close the disc tray. Next, press ⏻ **STANDBY/ON** to switch the power to standby, checking that the **POWER OFF** indication on the front panel display goes off. Wait at least 10 seconds. Lastly, disconnect the power cord.

Never lift or move the unit during playback — discs rotate at a high speed and may be damaged.

Place of installation

Select a stable place near the TV and AV system to which the unit is connected.

Do not place the player on top of a TV or color monitor. Keep it away from cassette decks or other components easily affected by magnetism.

Avoid the following types of places:

- Places exposed to direct sunlight
- Humid or poorly ventilated places
- Extremely hot or cold places
- Places subject to vibration
- Dusty places
- Places exposed to soot, steam or heat (in kitchens, etc.)

❖ Do not place objects on top

Do not place objects on top of the player.

❖ Do not obstruct the ventilation holes

Do not use the player on a shaggy rug, bed, or sofa, and do not cover the player with a cloth, etc. Doing so will prevent heat dissipation and could lead to damage.

❖ Keep away from heat

Do not place the player on top of an amplifier or other device generating heat. When installing in a rack, to avoid the heat generated by the amplifier and other devices, place it on a shelf below the amplifier whenever possible.

Turn the power off when not using the player

Depending on the conditions of the TV broadcast signals, striped patterns may appear on the screen when the TV is turned on while the player’s power is turned on. This is not a malfunction with the player or TV. If this happens, turn the player’s power off. In the same way, noise may be heard in the sound of a radio.

Condensation

If the player is moved suddenly from a cold place into a warm room (in winter, for example) or if the temperature in the room in which the player is installed rises suddenly due to a heater, etc., water droplets (condensation) may form inside (on operating parts and the lens). When condensation is present, the player will not operate properly and playback is not possible. Let the player stand at room temperature for 1 or 2 hours with the power turned on (the time depends on the extent of condensation). The water droplets will dissipate and playback will become possible.

Condensation can also occur in the summer if the player is exposed to the direct wind from an air-conditioner. If this happens, move the player to a different place.

Cleaning the player

Normally, wipe the player with a soft cloth. For tough dirt, apply some neutral detergent diluted in 5 to 6 parts water to a soft cloth, wring out thoroughly, wipe off the dirt, then wipe again with a dry cloth.

Note that getting alcohol, thinner, benzene or insecticide on the player could cause the print and coating to peel off. Also, avoid leaving rubber or vinyl products in contact with the player for long periods of time, as this could damage the cabinet.

When using chemical-impregnated wipes, etc., read the wipe’s cautions carefully.

Unplug the power cord from the power outlet when cleaning the player.

Caution for when the unit is installed in a rack with a glass door

Do not press the ⏏ **OPEN/CLOSE** on the remote control to open the disc tray while the glass door is closed. The door will hamper the movement of the disc tray, and the unit could be damaged.

Cleaning the pickup lens

The player's lens should not become dirty in normal use, but if for some reason it should malfunction due to dust or dirt, consult your nearest Pioneer authorized service center. Although lens cleaners for players are commercially available, we advise against using them since some may damage the lens.

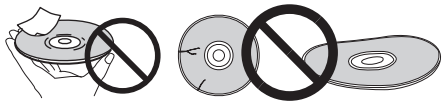
Handling discs

Do not use damaged (cracked or warped) discs.

Do not scratch the disc's signal surface or let it get dirty.

Do not load more than one disc into the player at a time.

Do not glue paper or put stickers onto the disc, or use a pencil, ball-point pen or other sharp-tipped writing instrument. These could all damage the disc.



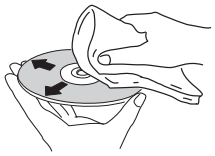
❖ Storing discs

Always store discs in their cases, and place the cases vertically, avoiding places exposed to high temperature or humidity, direct sunlight or extremely low temperatures.

Be sure to read the cautions included with the disc.

❖ Cleaning discs

It may not be possible to play the disc if there are fingerprints or dust on it. In this case, using a cleaning cloth, etc., to wipe the disc gently from the center toward the outer edge. Do not use a dirty cleaning cloth.



Do not use benzene, thinner or other volatile chemicals. Also do not use record spray or antistatic agents.

For tough dirt, apply some water to a soft cloth, wring out thoroughly, wipe off the dirt, then wipe off the moisture with a dry cloth.

❖ Specially shaped discs

Specially shaped discs (heart-shaped, hexagonal, etc.) cannot be used on this player. Never use such discs, as they will damage the player.

❖ Condensation on discs

If the disc is moved suddenly from a cold place into a warm room (in winter, for example), water droplets (condensation) may form on the disc surface. Discs will not play properly if there is condensation on them. Carefully wipe off the water droplets from the disc surface before using the disc.

Troubleshooting

Incorrect operation is often mistaken for trouble or malfunction. If you think that there is something wrong with this component, check the points below. Sometimes the trouble may lie in another component. Inspect the other components and electrical appliances being used. If the trouble cannot be rectified even after checking the points below, ask your nearest Pioneer authorized service center or your dealer to carry out repair work.

Playback

Problem	Check	Remedy
• Disc does not play. • Disc tray opens automatically.	Is the disc one that is playable on this player?	Check whether the disc is one that can be played on this player (page 7).
	Is the file one that is playable on this player?	• Check whether the file is one that can be played on this player (page 9). • Check whether or not the file is damaged.
	Is the disc scratched?	It may not be possible to play scratched discs.
	Is the disc dirty?	Clean the disc (above).
	Is there a piece of paper or sticker attached to the disc?	The disc may be warped and unplayable.
	Is the disc properly set in the disc tray?	• Set the disc with the printed side facing up. • Set the disc properly in the depression in the disc tray.
	Is the region number correct?	See *About region numbers* on page 9 for the region numbers of discs that can be played on this player.

Problem	Check	Remedy
No picture is displayed or the picture is not displayed properly.	Is the video cable properly connected?	• Connect the cable properly according to the connected devices (page 14). • Insert the cable firmly and all the way in.
	Is the video cable damaged?	If the cable is damaged, replace it with a new one.
	Is the input setting on the connected TV or AV receiver or amplifier right?	Read the operating instructions of the connected components and switch to the proper input.
	Are you viewing the picture from the video output terminal selected with **VIDEO SELECT**?	Press **VIDEO SELECT** to switch the video output terminal to be viewed (page 24). If Pure Audio is set to **Mode 2**, video signals are only output from the selected output terminal (page 52).
	Is the output video resolution properly set?	Use **OUTPUT RESOLUTION** to switch to a resolution at which the video and audio signals are output (page 24).
	• Is the player connected with an HDMI cable other than a High Speed HDMI™ cable (with a Standard HDMI™ cable)? • Are you using an HDMI cable with built-in equalizer?	1080p or Deep Color video signals may not be output properly, depending on the HDMI cable being used or the player's settings. Press ■ while pressing ▶ on the player's front panel to restore the video outputs to the factory default settings. After this, if you wish to output the video signals with 1080p or Deep Color, connect the TV using a High Speed HDMI™ cable without built-in equalizer, then reset the player using the **Setup Navigator** (page 20).
	Does the connected TV support the frame rate of the video signal being output by the player?	If the picture is not displayed when playing a disc with a frame rate that is not supported, the picture will not be displayed even when playback is stopped. In this case, use the procedure below to switch the frame rate of the video signals output from the player. Eject the disc and close the disc tray. Then, press ⏏ **OPEN/CLOSE** while pressing ▶ on the player's front panel to switch to a frame rate supported by the connected TV.
	Is **NTSC on PAL TV** properly set?	When viewing the video signals output from the player's S-Video or Video terminal, set **NTSC on PAL TV** properly (page 43).
	Is Pure Audio set to **Mode 1**?	When set to **Mode 1**, no picture is displayed during playback (page 52).
	Is a DVI device connected?	The picture may not be displayed properly if a DVI device is connected.
	Is **HDMI Color Space** properly set?	Change the **HDMI Color Space** setting (page 44).
Picture freezes and the front panel and remote control buttons stop working.		• Press ■ **STOP** to stop playback, then restart playback. • If the playback cannot be stopped, press ⏻ **STANDBY/ON** on the player's front panel to turn off the power, then turn the power back on. • If the power cannot be turned off, press and hold ⏻ **STANDBY/ON** on the player's front panel for over 5 seconds. The power will turn off.
Motion is unnatural or picture is not clear.	Is the output video resolution set to **1080/24p**?	• The picture may not be displayed properly, depending on the source. Set the resolution to something other than **1080/24p**. • Change the **Pure Cinema** setting (page 39).
No picture is displayed or picture is not output in high definition when playing BDs.		With some discs, it may not be possible to output the video signals from the **VIDEO** output terminals, the **S-VIDEO** output terminal or the **COMPONENT VIDEO** output terminals. In this case, connect using an HDMI cable (page 14).
• Picture is disturbed during playback. • Picture is dark.		• This player supports Macrovision analog copy protection technology. With some TVs (such as with built-in video deck), the picture will not be displayed properly when the copy protected DVD title is played. This is not a malfunction. • If the player and TV are connected via a DVD recorder/video deck, etc., the picture will not be displayed properly due to analog copy protection. Connect the player and TV directly.

Problem	Check	Remedy
• Picture is stretched. • Picture is cropped. • Aspect ratio cannot be switched.	Is the TV's aspect ratio properly set?	Read the TV's operating instructions and set the TV's aspect ratio properly.
	Is **TV Aspect Ratio** properly set?	Set **TV Aspect Ratio** properly (page 43).
	Is **4:3 Video Out** properly set?	Set **4:3 Video Out** properly (page 43).
	Is **DVD 16:9 Video Out** properly set?	Set **DVD 16:9 Video Out** properly (page 43).
		When video signals with a resolution of 1080/50i, 1080/50p, 720/50p, 1080/24p, 1080/60i, 1080/60p or 720/60p are being output from the **HDMI OUT** terminals or the **COMPONENT VIDEO** output terminals, they may be output with an aspect ratio of 16:9 even if **TV Aspect Ratio** is set to **4:3 (Standard)** (page 43).
	Is **Anamorphic Zoom** set to **On**?	Set **Anamorphic Zoom** to **Off** (page 51).
Picture is interrupted.		The picture may be interrupted when the resolution of the recorded video signal switches. Press **OUTPUT RESOLUTION** to select a setting other than **Auto**, **1080/24p** or **Source Direct** (page 24).
Sound and picture are not synchronized.	Is **Output Terminal** properly set?	Set **Output Terminal** properly (pages 20 and 43).
	Is **Lip Sync** properly set?	Adjust the amount of audio delay with the **Lip Sync** setting (page 41).
• No sound is output. • Sound is not output properly.	Is the disc played back in slow motion? Is the disc played back in fast forward or fast reverse?	No sound is output during slow motion play and forward and reverse scanning.
	Are the audio cables properly connected?	• Connect the cable properly according to the connected devices (page 14). • Insert the cable firmly and all the way in.
	Is the audio cable damaged?	If the cable is damaged, replace it with a new one.
	Are the connected components (AV receiver or amplifier, etc.) properly set?	Read the operating instructions of the connected components and check the volume, input, speaker settings, etc.
	Is **Output Terminal** properly set?	When **ANALOG AUDIO** is selected at **Output Terminal**, no audio signals are output from the **HDMI OUT** or **DIGITAL OUT** terminals (page 43).
	Is the output video resolution properly set?	Use **OUTPUT RESOLUTION** to switch to the resolution at which the video and audio signals are output (page 24).
	Is the AV receiver or amplifier, etc., connected to the **AUDIO OUT (7.1 ch)** terminals?	To listen to 2-channel analog audio, connect to **FRONT (L/R)** of the **AUDIO OUT (7.1 ch)** terminals (page 13) and set **Audio Output Mode** to **2 Channel** (page 44).
	Are the speakers properly set?	When the AV receiver or amplifier, etc., is connected to the **AUDIO OUT (7.1 ch)** terminals and **Audio Output Mode** is set to **Multi-channel**, set **Speaker Setup** properly (page 46).
	Is Pure Audio set to **Mode 1** or **Mode 2**?	If set to **Mode 1** or **Mode 2**, signals are only output from the output terminal set at **Output Terminal** (page 52).
	Is a DVI device connected?	The sound will not be output from the **HDMI OUT** terminals if a DVI device is connected. Connect the device to a **DIGITAL OUT** terminals or the **AUDIO OUT (7.1 ch)** terminals (page 17).
	Are you playing a DTS-CD?	To output the sound of DTS-CDs from the **HDMI OUT (SUB)** terminal, set **HDMI Audio Out** to **PCM** (page 44).
		For some BDs, audio signals are only output from **DIGITAL OUT** terminals or the **HDMI OUT** terminals.
Multi-channel sound is not output.	Is **Output Terminal** properly set?	Linear PCM (2-channel) audio signals are output from output terminals other than the one set at **Output Terminal** under **Audio Out**. Set **Output Terminal** properly (page 43).
	Is the AV receiver or amplifier connected to the **HDMI OUT (SUB)** terminal?	The **HDMI OUT (SUB)** terminal outputs linear PCM 2-channel audio signals. Be sure to connect the AV receiver or amplifier to the **HDMI OUT (MAIN)** terminal.
	Is the audio output of the connected AV receiver or amplifier, etc., properly set?	Read the operating instructions of the connected AV receiver or amplifier and check the audio output settings of AV receiver or amplifier.
	Is multi-channel sound selected?	Use the menu screen or **AUDIO** to switch the disc's sound to multi-channel.
	Is the AV receiver or amplifier, etc., connected to the **AUDIO OUT (7.1 ch)** terminals?	When the AV receiver or amplifier, etc., is connected to the **AUDIO OUT (7.1 ch)** terminals, set **Audio Output Mode** to **Multi-channel** (page 44). Also, set **Speaker Setup** properly (page 46).

Problem	Check	Remedy
Noise can be heard when outputting DTS Digital Surround signals from the **DIGITAL OUT** terminals.	Is the connected AV receiver or amplifier compatible with DTS Digital Surround?	If an AV receiver or amplifier that is not compatible with DTS Digital Surround is connected to the **DIGITAL OUT** terminals, set **DTS Out** to **DTS → PCM** (page 43).
192 kHz or 96 kHz digital audio signals cannot be output from the **DIGITAL OUT** terminals.		It is not possible to output 192 kHz or 96 kHz digital audio signals from this player's **DIGITAL OUT** terminals. The signals are automatically converted to 48 kHz or less for output.
Secondary audio or interactive audio is not output.	Is **HDMI Audio Out** properly set?	When listening to the sound from an **HDMI OUT (MAIN)** terminal, set **HDMI Audio Out** to **PCM** (page 44).
	Are **Dolby Digital Out** and **DTS Out** properly set?	When listening to the sound from an **DIGITAL OUT** terminal, set **Dolby Digital Out** to **Dolby Digital 1**, **DTS Out** to **DTS 1** (page 43).
Sound is fast or slow.	When an HDMI cable is connected, are audio signals being output from devices connected with cables other than HDMI cables?	When a Pioneer AV receiver or amplifier compatible with the PQLS function is connected directly to the player's **HDMI OUT (MAIN)** terminal using an HDMI cable, the PQLS function is activated when playing an audio CD (CD-DA). Because of this, the sound output from components other than the ones connected by HDMI cable may be fast or slow. If this happens, set **PQLS** to **Off** (page 44).
After a disc is inserted, **Loading** stays displayed and playback does not start.	Are there too many files recorded on the disc?	When a disc on which files are recorded is inserted, depending on the number of files recorded on the disc, loading may take several dozen minutes.
■ is displayed in file names, etc.		The characters that cannot be displayed on this player are displayed in ■.
A message indicating low memory (local storage) appears while playing a BD-ROM disc.		Erase the BDMV data (page 50).
The DVD layer of BD and DVD hybrid discs cannot be played.	Is **Hybrid Disc Playback** properly set?	Set **Hybrid Disc Playback** to **DVD** (page 44).
The CD layer of BD and CD hybrid discs cannot be played.	Is **Hybrid Disc Playback** properly set?	Set **Hybrid Disc Playback** to **CD** (page 44).
The BDMV format on BD-R/-RE discs cannot be played.		To play the BDMV format on BD-R/-RE discs containing both BDMV and BDAV formats, set **BDMV/BDAV Playback Priority** to **BDMV** (page 44).

Software updating

Problem	Check	Remedy
"Connection to the software updating server failed" is displayed when you try to update the software.		Perform **Connection Test** (page 50). If "Network connection test completed successfully." is displayed, check the proxy server settings (page 49). Also there may be a problem with the Internet connection. Contact your Internet service provider.
Software updating is slow.		Depending on the Internet connection and other conditions, some time may be required to update the software.
• "WRT NG ****" is displayed on the front panel display during software updating. (**** meaning any characters) • "WRT FAILED" is displayed on the front panel display during software updating.		The message is displayed when software updating has failed. Check again whether it can be updated properly.

Problem	Check	Remedy
A message other than "Network connection test completed successfully" is displayed when **Connection Test** is performed.	Is "LAN cable not connected" displayed?	Check that this player and Ethernet hub (or router with hub functionality) are properly connected.
	• Is "IP address cannot be obtained." displayed? • Is "No response from the gateway." displayed?	• If the IP address is obtained using the DHCP server function, check the setting is correct at the **Display Network Configuration** (page 50). For details on the DHCP server function, see the operating instructions of the Ethernet hub (or router with hub functionality). • Set the IP address manually.
	Is "IP address is overlapped." displayed?	• Check the operation and settings of the DHCP server function of the Ethernet hub (or router with hub functionality). For details on the DHCP server function, see the operating instructions of the Ethernet hub (or router with hub functionality). • If this player's has been set manually, reset the IP address of this player or other components.
	Is the Ethernet hub (or router with hub functionality) operating properly?	• Check the settings and operation the Ethernet hub (or router with hub functionality). For details, see the operating instructions of the Ethernet hub. • Reboot the Ethernet hub (or router with hub functionality).

KURO LINK

Problem	Check	Remedy
KURO LINK function does not work.	• Is the HDMI cable properly connected? • Are you connected to the **HDMI OUT (SUB)** terminal?	To use the KURO LINK function, connect the Flat Screen TV, AV system (AV receiver or amplifier, etc.) and HD AV Converter to the **HDMI OUT (MAIN)** terminal (page 15).
	Is the HDMI cable you are using a High Speed HDMI™ cable?	Use a High Speed HDMI™ cable. The KURO LINK function may not work properly if HDMI cable other than a High Speed HDMI™ cable is used.
	Is **KURO LINK** set to **On** on the player?	Set **KURO LINK** to **On** on the player (page 44).
	Does the connected device support the KURO LINK function?	• The KURO LINK function will not work with devices manufactured by companies other than Pioneer, even when connected using an HDMI cable. • The KURO LINK function will not work if devices that do not support the KURO LINK function or devices manufactured by companies other than Pioneer are connected between the KURO LINK-compatible device and the player. • Even when connected to a Pioneer product compatible with the KURO LINK function, some of the functions may not work. Also refer to the operating instructions of the connected device.
	Is KURO LINK set to On on the connected device?	Set KURO LINK to On on the connected device. The KURO LINK function operates when KURO LINK is set to On for all devices connected to the **HDMI OUT (MAIN)** terminal. Once connections and settings of all the devices are finished, be sure to check that the player's picture is output to the Flat Screen TV. (Also check after changing the connected devices and connecting and/or disconnecting HDMI cables.) If the player's picture is not being output to the Flat Screen TV, the KURO LINK function may not work properly. For details, refer to the operating instructions of the connected device.
	Are multiple players connected?	The KURO LINK function may not work if three or more players, including this player, are connected by HDMI cable.

Others

Problem	Check	Remedy
The player's power turns off automatically.	Is **Auto Power Off** set to **On**?	If **Auto Power Off** is set to **On**, the player's power turns off automatically if no operation is performed for over 30 minutes (page 45).
The player's power turns on or off automatically.	Is **KURO LINK** set to **On**?	The player's power may turn on and off together with the power of the TV connected to the **HDMI OUT (MAIN)** terminal. If you do not want the player's power to turn on and off when the TV's power is turned on and off, set **KURO LINK** to **Off** (page 44).
Player cannot be operated with remote control.	Is an AV receiver or amplifier connected to the **CONTROL IN** terminal on the player's rear panel?	Operate with the remote control of the device connected to the **CONTROL IN** terminal.
	Are you operating the remote control from a point too far away from the player?	Operate from within 7 m of the remote control sensor.
	Are the batteries dead?	Replace the batteries (page 6).
Input of connected TV, AV system and HD AV Converter switches automatically.	Is **KURO LINK** set to **On**?	The input of the TV, AV system (AV receiver or amplifier, etc.) and HD AV Converter connected to the **HDMI OUT (MAIN)** terminal may automatically switch to the player when playback starts on the player or the menu screen (Home Media Gallery, etc.) is displayed. If you do not want the inputs of the connected TV, AV system (AV receiver or amplifier, etc.) and HD AV Converter to switch automatically, set **KURO LINK** to **Off** (page 44).
Settings you have made have been cleared.	• Have you disconnected the power cord while the player's power was on? • Has there been a power failure?	Always press ⏻ **STANDBY/ON** on the player's front panel or ⏻ **STANDBY/ON** on the remote control and check that **POWER OFF** has turned off from the player's front panel display before disconnecting the power cord. Be particularly careful when the power cord is connected to the AC outlet on another device because the player turns off in conjunction with the device.
"Processing failed." is displayed.		If the message appears repeatedly, please ask your nearest Pioneer authorized service center or your dealer to carry out repair work.

Glossary

❖ Aspect ratio

The ratio of a TV screen's width to its height. Conventional TVs have an aspect ratio of 4:3, while high definition (HD) and widescreen TVs have an aspect ratio of 16:9.

❖ Audio language

Multiple audio tracks, for example the original sound and the dubbed sound, can be recorded on BD-ROM or DVD-Video discs. Up to 32 languages (32 audio tracks) can be recorded on BD-ROM discs, up to 8 languages (8 audio tracks) on DVD-Video discs, so you can select the desired language when viewing the disc.

❖ AVCHD (Advanced Video Codec High Definition)

The AVCHD is a high definition (HD) digital video camera recorder format recording high-definition onto certain media by using highly efficient codec technologies.

❖ BD-J

With BD-ROMs, it is possible to use Java applications to create highly interactive titles, for example including games.

Java and all Java-based trademarks and logos are trademarks or registered trademarks of Sun Microsystems, Inc. in the U.S. and other countries.

❖ BDAV

Of the BD format, the Audio Visual Format Specifications for HD digital broadcast recording is referred to as BDAV on this player and in this operating instructions.

❖ BDMV

Of the BD format, the Audio Visual Format Specifications designed for pre-packaged high definition (HD) movie contents is referred to as BDMV on this player and in this operating instructions.

❖ Component video output

This video output terminal provides clearer pictures when connected to a TV equipped with component inputs. Component video signals consist of three signals, Y, P_B and P_R.

❖ Composite video output

Signals mixing the luminance signal (Y) and the color signal (C) so they can be transferred on a single cord are output from this terminal.

❖ Deep Color

This is one of the capabilities of HDMI™. The players supporting Deep Color can transmit a video signal with a color bit depth of greater than 8 bits per color component. Subtle color gradations can be reproduced when connected to a TV that supports Deep Color.

❖ Default Gateway

A default gateway is a communication device such as a router which passes data between networks. It is used to direct data to networks on which the destination gateway is not explicitly specified.

❖ DHCP (Dynamic Host Configuration Protocol)

This protocol provides configuration parameters (IP address, etc.) for computers and other devices connected to the network.

❖ DivX

DivX is a media technology developed by DivX Inc. DivX media files include moving picture data.

❖ DNS (Domain Name System)

This is a system for associating Internet host names with IP addresses.

❖ Dolby Digital

Dolby Digital is an audio format to record the sound in up to 5.1 channels with a fraction of the amount of data as compared to linear PCM audio signals.

❖ Dolby Digital Plus

Dolby Digital Plus is an audio format for high-definition media. Built on Dolby Digital, it combines the efficiency and flexibility to provide high quality multi-channel audio. With BD-ROMs, up to 7.1 channels of digital sound can be recorded.

❖ Dolby TrueHD

Dolby TrueHD is an audio format using lossless coding. With BD-ROMs, up to 8 channels can be recorded at 96 kHz/24 bits, or up to 6 channels at 192 kHz/24 bits.

❖ DRM

A technology for protecting copyrighted digital data. Digitized videos, images and audio retain the same quality even when they are copied or transferred repeatedly. DRM is a technology for restricting the distribution or playback of such digital data without the authorization of the copyright holder.

❖ DTS Digital Surround

DTS Digital Surround is an audio format to record 48 kHz/24 bits audio signals in 5.1 channels.

❖ DTS-HD High Resolution Audio

DTS-HD High Resolution Audio is an audio format using lossy coding. It can record 7.1 channels at 96 kHz/24 bits.

❖ DTS-HD Master Audio

DTS-HD Master Audio is an audio format using lossless coding. With BD-ROMs, 7.1 channels can be recorded at 96 kHz/24 bits, or 5.1 channels at 192 kHz/24 bits.

❖ Dynamic range

This refers to the difference between the maximum and minimum level of the sound. The dynamic range is measured in units of decibels (dB).

When the dynamic range is compressed (Audio DRC), the minimum signal level is increased and the maximum signal level decreased. This way, the volume of loud sounds such as explosions is reduced, while the sounds with a low level, such as human voices, are easier to listen to.

❖ Ethernet

A standard for local area networks (LANs) used to connect multiple computers, etc. in the same location. This player supports 100BASE-TX.

❖ Frames and fields

A frame is the unit for one of the still pictures which compose motion pictures. One frame consists of a picture of odd lines and a picture of even lines called fields in video signal with interlaced scan method (576i, 1080i, etc.).

❖ HDCP (High-bandwidth Digital Content Protection)

HDCP is a specification to protect audiovisual content across the DVI/HDMI interface.

❖ HDMI (High-Definition Multimedia Interface)

A digital interface standard for next-generation TVs expanding the DVI (Digital Video Interface) terminal used for example for computer displays. It allows transfer of non-compressed digital video and audio signals (Dolby TrueHD, Dolby Digital Plus, Dolby Digital, DTS-HD Master Audio, DTS-HD High Resolution Audio, DTS Digital Surround, MPEG-2 AAC, linear PCM, etc.) with a single connector.

❖ Interactive audio

The audio signals recorded in the titles of BD-ROMs. They include for example the clicking sound made when the menu screen is operated.

❖ Interlaced scan

With this method, one picture is displayed by scanning it twice. The odd lines are displayed in the first pass, the even lines are displayed in the second, to form a single picture (frame). Interlaced scan is indicated in this player and operating instructions by an “i” after the resolution value (for example, 576i).

❖ IP address

An address that identifies a computer or other device connected to the Internet or local area network. It is represented a number in four sections.

❖ Linear PCM

This is referred as the audio signals that are not compressed, frequently used for DVD-Video discs containing musicals or music concerts. This can also be indicated “48 kHz/16 bit”, “96 kHz”, etc.

❖ MAC (Media Access Control) address

A hardware identification number assigned specifically to the network device (LAN card, etc.).

❖ MPEG (Moving Picture Experts Group)

The name of a family of standards used to encode video and audio signals in a digital compressed format. The video encoding standards include MPEG-1 Video, MPEG-2 Video, MPEG-4 Visual, MPEG-4 AVC, etc. The audio encoding standards include MPEG-1 Audio, MPEG-2 Audio, MPEG-2 AAC, etc.

❖ Multi angle

Up to 9 camera angles can be recorded simultaneously on BD-ROM or DVD-Video discs, letting you view the same scene from different angles.

❖ Parental Lock

Playback of the contents of some BD-ROM or DVD-Video discs can be restricted, for example for discs containing scenes of violence. With BD-ROM discs, an age restriction can be set to restrict playback. Playing DVD-Video title can be restricted by setting the parental lock level.

❖ Picture-in-Picture (P-in-P)

This is a function for superimposing a sub video on the main video. Some BD-ROMs include secondary video, which can be superimposed on the primary video.

❖ Port number

This is a sub-address provided below the IP address for simultaneously connecting to multiple parties during Internet communications.

❖ Progressive scan

With this method, one picture is consisted of a single picture, without dividing it in two pictures. Progressive scan provides clear pictures with no flicker, in particular for still pictures that contain much text, graphics, or horizontal lines. Progressive scan is indicated in this player and operating instructions by a “p” after the resolution value (for example, 576p).

❖ Proxy server

This is a relay server for ensuring fast access and safe communications when connecting to the Internet from an internal network.

❖ Region number

A number assigned to Blu-ray Disc Players, BD-ROM and DVD-Video discs according to the region in which they are sold. A disc can be played if the region numbers indicated on the disc include the number set for the player or if “ALL” is indicated.

❖ S-Video output

An output terminal for transmitting separate luminance (Y) and color (C) signals over a single cord. It offers clearer pictures than the composite video output.

❖ Secondary audio

Some BD-ROMs include sub audio streams mixed with the main audio. These sub audio streams are called “secondary audio”. On some discs this secondary audio is recorded as the audio for the secondary video.

❖ Secondary video

Some BD-ROMs include sub videos superimposed on the main videos using the Picture-in-Picture function. These sub videos are called “secondary video”.

❖ Subnet mask

This is used to identify which part of the IP address corresponds to the subnet (a separately managed network). The subnet mask is expressed as ‘255.255.255.0’.

❖ Subtitle language

This refers to the language of the subtitles often used on movies. Up to 255 languages (255 types of subtitles) can be recorded on BD-ROM discs, 32 languages (32 types of subtitles) on DVD-Video discs, so you can select the desired subtitle when viewing the disc.

❖ VC-1

A video codec developed by Microsoft and standardized by the Society of Motion Picture and Television Engineers (SMPTE). Some BDs include videos encoded in this codec.

❖ x.v.Color

“x.v.Color” is a promotion name given to the products that have the capability to realize a wide-gamut color space based on the international standard specifications defined as xvYCC.
A wider range of colors than before can be reproduced by playing video signals conforming to “xvYCC” standards on this player when connected to an “x.v.Color”-compatible TV, etc.

07 Specifications

Model			BDP-LX91
Type			Blu-ray Disc PLAYER
Rated voltage			AC 220 V to 240 V
Rated frequency			50 Hz/60 Hz
Power consumption			59 W
Power consumption (standby)			0.3 W
Weight			13.9 kg
External dimensions (including projecting parts)			420 mm (W) x 143 mm (H) x 365 mm (D)
Tolerable operating temperature			+5 °C to +35 °C
Tolerable operating humidity			5 % to 85 % (no condensation)
Output terminals	**HDMI**		2 sets, 19-pin: 5 V, 250 mA (Total value for the HDMI OUT (MAIN) and HDMI OUT (SUB) terminals)
	Video outputs	**Video**	1 set, RCA jack: 1.0 Vp-p (75 Ω)
		S-Video	1 set, S-Video jack: Y (luminance): 1.0 Vp-p (75 Ω) C (color): 0.300 Vp-p (75 Ω, PAL), 0.286 Vp-p (75 Ω, NTSC)
		Component video	1 set, BNC jacks: Y: 1.0 Vp-p (75 Ω) P_B, P_R: 0.7 Vp-p (75 Ω)
	Audio outputs	**7.1-channel (multi-channel: front left/ right, surround left/right, center, surround back left/right, subwoofer)**	1 set, Number of channels: 8, RCA jacks
		Audio output level	200 mVrms (1 kHz, –20 dB)
		Frequency response	4 Hz to 88 kHz (192 kHz sampling)
		S/N ratio	115 dB
		Dynamic range	103 dB
		Total harmonic distortion	0.0015 %
		Wow & flutter	Below measurable limits (±0.001 % W. PEAK)
	Digital audio outputs	**Optical**	1 set, Optical digital jack
		Coaxial	1 set, RCA jack
LAN			1 set, Ethernet jack (100BASE-TX)
Control	**Input**		1 set, Minijack (3.5 ø)

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